IMB-351 / IMB-351PS

Intel® Bay Trail SoC CPU Mini-ITX Motherboard

User Manual

Ver. 1.1

Contents

Safety Information **5**
About this guide **6**
Typography **7**
Packing List **8**
Revision History **9**
Specifications Summary **9**
Block Diagram **11**

Chapter 1 - Product Introduction **12**
1.1 Product highlights 13
1.1.1 Product Overview 13
1.1.2 Platform Features and Benefits 13
1.1.3 key Architecture Features 13
1.2 Before you Proceed 14
1.3 Motherboard Overview 15
1.3.1 Placement Direction 15
1.3.2 Screw Holes 15
1.3.3 Motherboard Layout 16
1.3.4 Layout Content List 16
1.3.5 Internal Connector 17
1.4 Central Processing Unit (CPU) 18
1.4.1 Installing the CPU 18
1.4.2 Installing the CPU Heatsink and Fan 18
1.5 System Memory 19
1.5.1 Overview 19
1.5.2 Memory Configurations 19
1.5.3 Installing a SO-DIMM 20
1.5.4 Removing a SO-DIMM 22
1.6 Expansion Card 23
1.6.1 Installing an Expansion Card 23
1.6.2 Configuring an Expansion Card 23
1.6.3 PCI Express x16 slot 23
1.6.4 MINI PCI Express 24
1.7 Jumpers 25
1.7.1 Clear CMOS (CMOS1) 25
1.7.2 LVDS panel type select 26
1.7.3 COM RI/+5V/+12V select 26

1.7.4 LVDS Back Light power selecion 27
1.7.5 SATA DOM power selecion 27
1.7.6 Cash drawer mode selecion 28
1.8 Connectors 29
1.8.1 Rear panel connectors 29
1.8.2 CPU and System fan connectors (CPU_FAN, SYS_FAN) 31
1.8.3 System Panel (F_PANEL) 31
1.8.4 ATX power connectors (ATX12V) 33
1.8.5 Serial Port connectors (JCOM3-1) 34
1.8.6 GPIO Connector (DIO) 34
1.8.7 Audio Mic.-In & Line-Out Connector (F_AUDIO) 35
1.8.8 LVDS Connector (LVDS) 36
1.8.9 LCD Inverter Connector (LVDSPW) 37
1.8.10 LPC Connector (LPC_DEBUG) 37
1.8.11 Serial ATA II Connector (SATA1. SATA2) 38
1.8.12 USB Connector (F_USB) 38
1.8.13 SATA Power Connector (SATA_PWR) 39
1.8.14 Speaker connector (SPKR) 39
1.8.15 USB 3.0 Connector (USB3.0) 40
1.8.16 Parallel Port Header(LPT) 40

Chapter 2 - BIOS Setup 41
2.1 BIOS Setup Program 42
2.1.1 Legend Box 43
2.1.2 List Box 43
2.1.3 Sub-menu 43
2.2 BIOS Menu Screen 44
2.3 Main Setup 45
2.4 Advanced BIOS Setup 46
2.4.1 Launch PXE OpROM 46
2.4.2 ACPI Settings 47
2.4.3 RTC Wake Setting 48
2.4.4 CPU Configuration 49
2.4.5 SATA Configuration 49
2.4.6 Intel IGD SWSCI OpRegoin 50
2.4.7 USB Configuration 51
2.4.8 Super IO Configuration 52
2.4.9 H/W Monitor 53
2.4.10 TXE Configuration 54
2.4.11 Trusted Computing 55

2.4.12 DIO Configuration.....56
2.4.13 EUP Function.....57
2.5 Chipset Menu.....58
2.5.1 North Bridge.....58
2.5.2 South Bridge.....60
2.6 Boot.....61
2.7 Security.....63
2.8 Save & Exit.....64

Safety Information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

The symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

Safety Declaration

This device complies with the requirements in Part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

About this guide

This user guide contains the information you need when installing and configuring the motherboard.

How this guide is organized

This manual contains the following parts:

- **Chapter 1: Product introduction**

  This chapter describes the features of the motherboard and the new technology it supports. This chapter also lists the hardware setup procedures that you have to perform when installing system components. It includes description of the jumpers and connectors on the motherboard.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. Technical Support

If a problem arises with your system and no solution can be obtained from the user manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance.

2. Optional documentation

Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.

DANGER/WARNING: Information to prevent injury to yourself when trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task.

IMPORTANT: Instructions that you MUST follow to complete a task.

NOTE: Tips and additional information to help you complete a task.

Typography

Bold text	Indicates a menu or an item to select
Italics	Used to emphasize a word or a phrase
<Key>	Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key Example: <Enter> means that you must press the Enter or Return key
<Key1>+<Key2>+<Key3>	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+) Example: <Ctrl>+<Alt>+<D>
Command	Means that you must type the command exactly as shown, then supply the required item or value enclosed in brackets Example: At the DOS prompt, type the command line: afudos /i[filename] afudos /iP5P800VM.ROM

Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x IMB-351/IMB-351PS mini ITX Motherboard
- 1 x DVD-ROM contains OS drivers
- 1 x I/O Shield
- 1 x Startup manual

If any of the above items is damaged or missing, please contact your retailer.

Revision History

Revision	Revision History	Date
V 1.0	First release version for PCB v1.0	Jun 2014
V 1.1	Fix some errors	Aug 2014

Specifications Summary

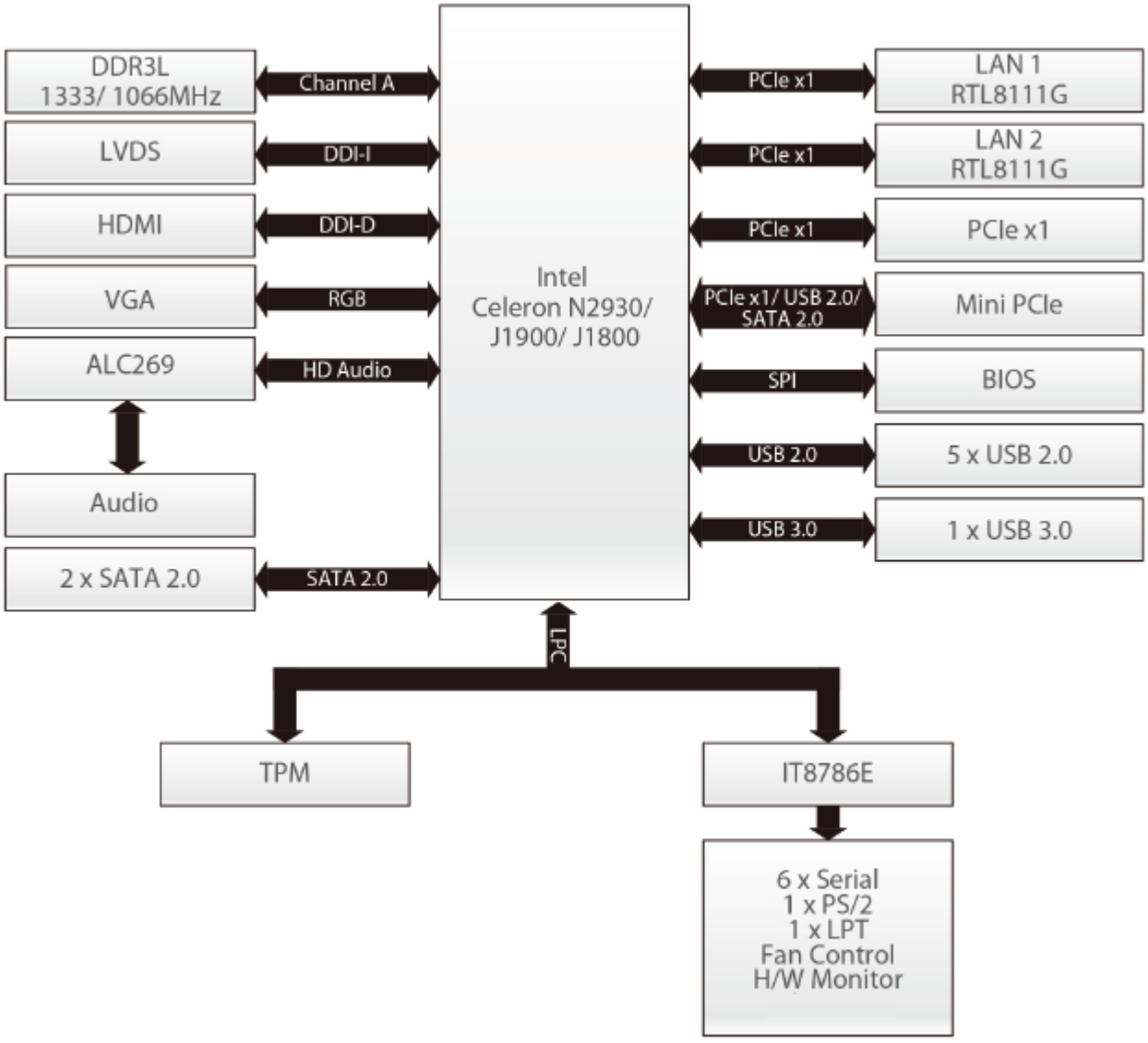
Specifications	
System	
CPU	CPU Intel® Celeron™ N2930/ J1900/ J1800 (optional)
BIOS	AMI 64Mb SPI ROM
I/O Chipset	IT8786E
Memory	Single channel DDR3L 1333/1066, 1x 204-pin SO-DIMM, up to 8GB
Watchdog Timer	1-255 level timer interval
H/W Status Monitor	Monitoring temperature, voltage and cooling fan status. Auto throttling control when CPU overheats.
Expansion Slots	1 Mini PCIe (for full length), 1 PCIe x1(Gen2)
Power State	S0, S3, S4, S5
TPM	TPM 1.2 by Infineon SLB9635 (optional)
Wake up on LAN or Ring	Yes (PXE)
Smart Fan Control	Yes
Display	
Chipset	Integrated Intel HD Graphics engine
Display	VGA, HDMI ,LVDS
VGA	Rear IO, up to 2560 x 1600 (@60Hz)
HAMI	Rear IO, up to 1920 x 1080 (@60Hz)
LVDS	On board, up to 1920 x 1200 (@60Hz)
LVDS Backlight	Yes
Audio	
Audio Codec	Realtek ALC269
Audio Interface	Mic-in, Line-out
Ethernet	
LAN1	Realtek RTL8111G GbE LAN
LAN2	Realtek RTL8111G GbE LAN

Specifications

Back Panel I/O Port	
Back Panel I/O Port	1 DC inlet 2 PS/2 Keyboard Mouse 1 VGA Port 1 HDMI Port 2 Serial RS-232 Port 4 USB 2.0 Ports 1 RJ11 Ports (only for IMB-351PS) 2 LAN RJ45 Ports (only for IMB-351) 1 LAN RJ45 Ports (only for IMB-351PS) 1 Audio I/O(2 Jacks)
Internal I/O Connector	
Internal I/O Connector	1 For 1 x USB 2.0 port 3 Serial RS-232 1 Serial RS-232 with 5V/12V power 1 Parallel Port 2 SATA connectors (2 SATA 2.0) 1 SATA power connector 1 Front Audio 1 Front Panel 1 CPU Fan 1 System Fan 1 Mini PCIe 1 PCIe x 1 1 LVDS 1 LVDS Backlight Power 1 vertical USB 3.0 port 1 TPM 1 GPIO 8bit
Mechanical & Environmental	
Power Requirement	+12V (5A)
Power Type	ATX
Power Connector	1 12V DC inlet (rear IO) 1 4-pin ATX 12V Power Connector (on board)
Operating Temperature	0°C to 60°C (32°F to 140°F)
Operating Humidity	0% to 90% relative humidity, non-condensing
Size (L x W)	6.69" x 6.69" (170 x 170mm)
Weight	0.77 lbs (0.35 Kg)

* Specifications are subject to change without notice.

Block Diagram



This chapter describes the motherboard features and the new technologies it supports.

1 Product Introduction

Chapter 1 - Product Introduction

1.1 Product highlights

1.1.1 Product Overview

IMB-351 is designed with Intel® Celeron™ J1800/J1900/N2930 SoC for industrial applications that request performance computing and reliable stability. The motherboard has on board CPU Intel® Celeron™ J1800/J1900/N2930 Dual core/Quad core/Quad core 2.58/2.42/2.16 GHz.

IMB-351 has rich I/O connectivity with PS/2, COM port, Dual LAN, USB port and audio Jack integrated in a standard 170mm x 170mm mini-ITX form factor. These mother boards also support dual display for LVDS, HDMI and VGA. IMB-351 also comes with plenty of connectivity and expansion options. Vertical USB3.0 port, 8-bit GPIO, two SATAII port , mini PCIe expansion slot and PCIe x 1 slot enable easy integration. 10/100/1000 Mbps Ethernet port is also available to deliver high speed networking.

1.1.2 Platform Features and Benefits

- Integrated Gfx (Intel® HD Graphics) supports embedded hardware decode accelerator deliver 1080p HD video stream with excellent performance.
- DirectX® 11.1 & Open GL 4.0 let you enjoy awesome graphics performance, stunning 3D visual effect and dynamic interactivity
- Memory support low voltage DDR3 memory controller
- Operating system support:
  - Windows 7 32 bit / 64 bit
  - Windows 8 32 bit / 64 bit
  - Fedora 18 Remix / Yocto

1.1.3 Key Architecture Features

- Supports Intel FCBGA1170 CPU, the Intel® Celeron™ J1800/J1900/N2930 SoC processors.
  - 22nm leading-edge low-power SoC
  - Integrated Gfx (Intel® HD Graphics) & memory controller
  - 4 &2 Cores, up to L2 2MB Cache
  - Compatible with high speed DDR3L-1333
  - TDP: 10W
- Intel® Trusted Execution Engine (TXE) Technology
- Integrated Display Interfaces
  - VGA
  - LVDS
  - HDMI

- Intel® HD Graphics
  - DirectX® 11.1
  - OpenGL 3.2.
  - OpenCL 1.2
  - Display controller, incorporating the display planes, pipes and physical interfaces
  - Hardware decode of most common HD codecs (WMV9, VP8, H.264, MPEG2 MVC and VC-1)

- TPM
  - Support TPM 1.2

- I/O
  - PCI Express® x 1 Gen2
  - Mini PCI Express® x 1 Gen2
  - 2 SATA ports (2 ports of SATA 2.0)
  - Gigabit Ethernet Media Access Controller (GbE MAC)

  IPv4 and IPv6 Checksum Offload
  - High Definition Audio
  - USB: 3.0, up to 1 ports
  - USB: 2.0, up to 5 ports

1.2 Before you Proceed

Take note of the following precautions before you install motherboard components or change any motherboard settings.

- Unplug the power cord from the wall socket before touching any component.
- Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded anti-static pad or in the bag that came with the component.
- Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

1.3 Motherboard Overview

Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it. Refer to the chassis documentation before installing the motherboard.

Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so can cause you physical injury and damage motherboard components.

1.3.1 Placement Direction

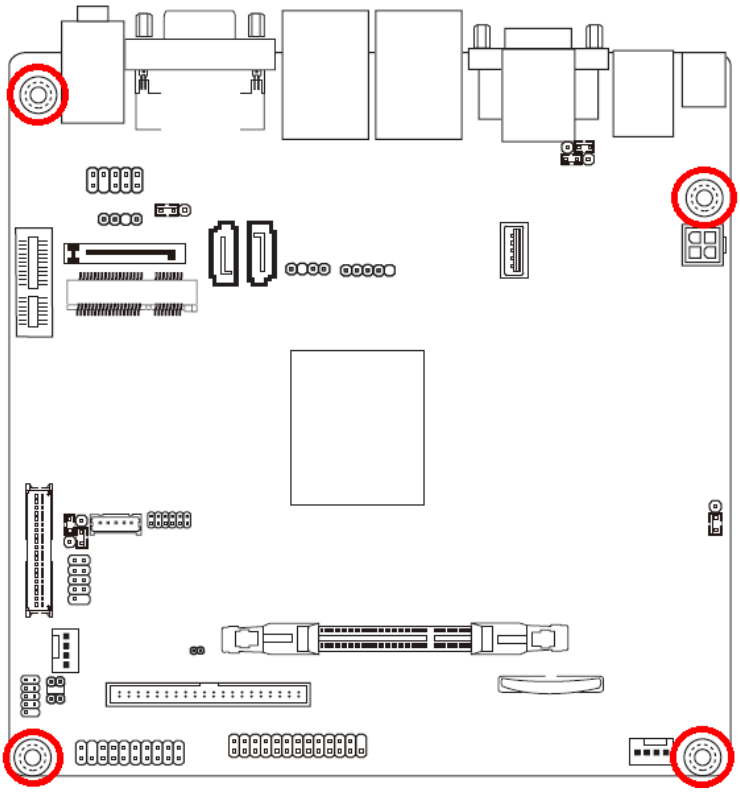
When installing the motherboard, make sure that you place it into the chassis in the correct orientation. The edge with external ports goes to the rear part of the chassis as indicated in the image below.

1.3.2 Screw Holes

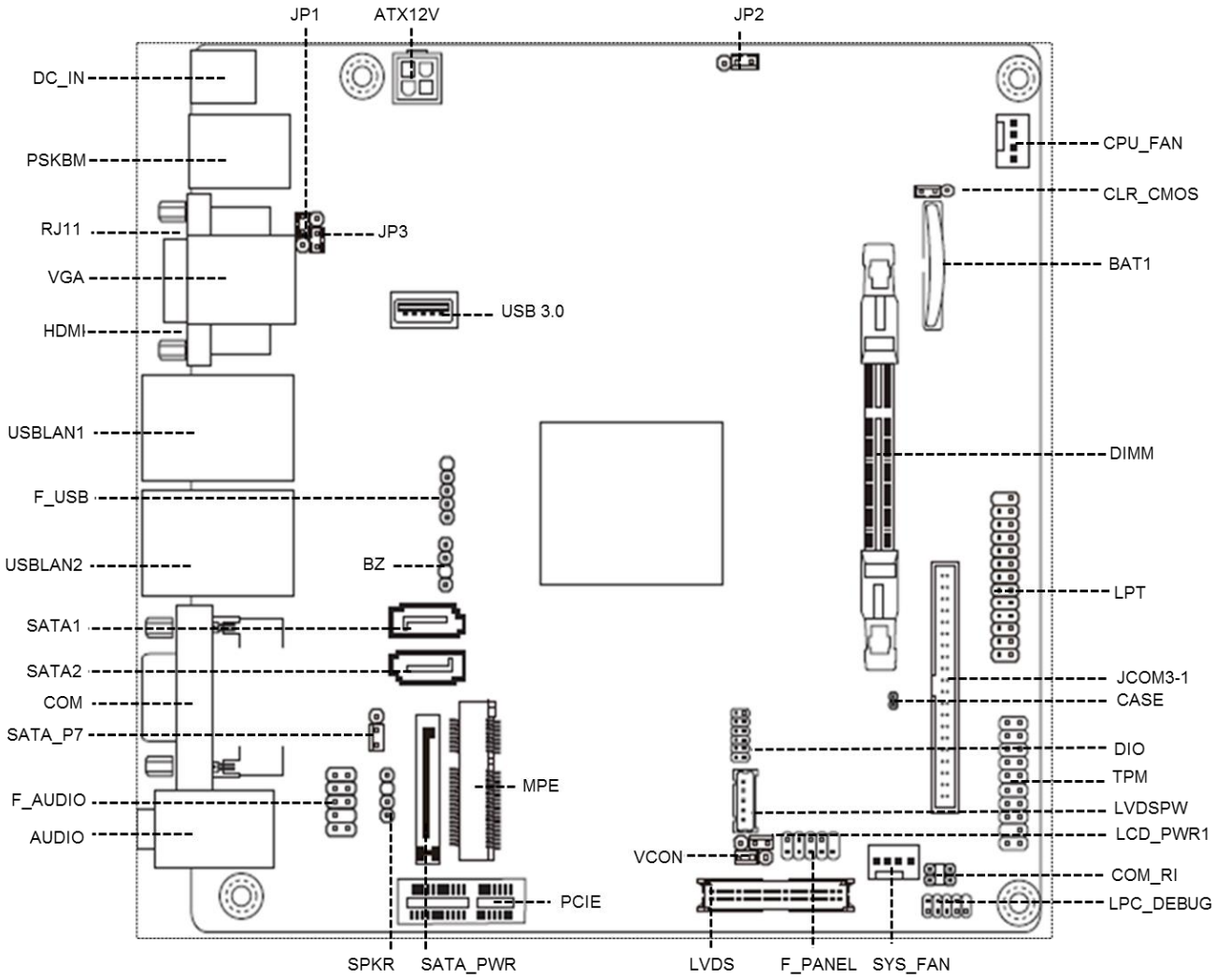
Place four (4) screws into the holes indicated by circles to secure the motherboard to the chassis.

Do not over tighten the screws! Doing so can damage the motherboard.

Place this side towards the rear of the chassis.



1.3.3 Motherboard Layout



1.3.4 Layout Content List

Slots & socket			
Label	**Function**	**Note**	**Page**
DIMM	204-pin DDR3L SO-DIMM Slot		19
PCIE	PCI-e x1 Slot		23
MPE	MINI PCI-e Slot		24

Jumpers			
Label	**Function**	**Note**	**Page**
CLR_CMOS	Clear CMOS	3 x 1 header, pitch 2.54mm	25
VCON	VCON voltage select	3 x 1 header, pitch 2.54mm	26
LCD_PWR1	BL voltage select	3 x 1 header, pitch 2.54mm	27
COM_RI	RI/+5V/+12V select	6 x 2 header, pitch 2.00mm	26
SATA_P7	Power SATA select	3 x 1 header, pitch 2.54mm	27
JP1	Cash drawer select	3 x 1 header, pitch 2.00mm	28

JP2	Cash drawer power select	3 x 1 header, pitch 2.00mm	28
JP3	Cash drawer select	3 x 1 header, pitch 2.00mm	28

Rear Panel Connector			
Label	**Function**	**Note**	**Page**
DC_IN	12V DC inlet	DC inlet	29
PSKBM	PS/2 Keyboard and Mouse	6-pin Mini-Din	29
RJ11	For cash drawer	6-pin port	30
HDMI	HDMI Port	HDMI 1.3 19-pin	29
VGA	VGA Port	D-sub 15-pin, female	29
USBLAN1	RJ-45 Ethernet Connector x 1 USB 2.0 Connector x 2		29
USBLAN2	RJ-45 Ethernet Connector x 1 USB 2.0 Connector x 2		29
COM	Serial port x 2	D-sub 9-pin, male	30
AUDIO	Audio Line-Out , Mic.-In	2 Channel Audio I/O (2 jacks)	30

1.3.5 Internal Connector

Internal Connector			
Label	**Function**	**Note**	**Page**
CPU_FAN	CPU fan connector	3 x 1 wafer, pitch 2.54mm	31
SYS_FAN	System fan connector	3 x 1 wafer, pitch 2.54mm	31
DIO	DIO connector	5 x 2 header, pitch 2.00mm	34
F_PANEL	Intel front panel connector	5 x 2 header, pitch 2.54mm	31
ATX12V	ATX power connectors	2 x 2 header	33
F_AUDIO	Audio connector	5 x 2 header, pitch 2.54mm	35
LVDS	24-bit LVDS connector	2 x 20 connector	36
LVDSPW	LCD inverter connector	1 x 5 connector	37
SATA_PWR	SATA power connector	15P male connector	39
LPC_DEBUG	LPC debug connector	5 x 2 connector	37
SPKR	Speaker connector	1 x 4 header	39
SATA1 ~ 2	SATA data connector * 2	7P male connector	38
F_USB	USB 2.0 connector	1 x 4 header	38
USB3.0	USB 3.0 connector	9P female connector	40
JCOM3-1	Serial port connector * 4	20 x 2 connector	34
LPT	Parallel port connector	13 x 2 header	40

1.4 Central Processing Unit (CPU)

The motherboard comes with a surface mount FCBGA1170 socket designed for the Intel® Bay Trail SoC (Single-On-Chip) CPU (J1900/J1800/N2930).

- Upon purchase of the motherboard, make sure that the PnP cap is on the socket and the socket pins are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket pins/motherboard components. Supplier will shoulder the cost of repair only if the damage is shipment/transit-related.
- The product warranty does not cover damage to the socket pins resulting from incorrect CPU installation/removal, or misplacement/loss/incorrect removal of the PnP cap.
- Install the CPU fan or heatsink assembly before you install motherboard to the chassis.

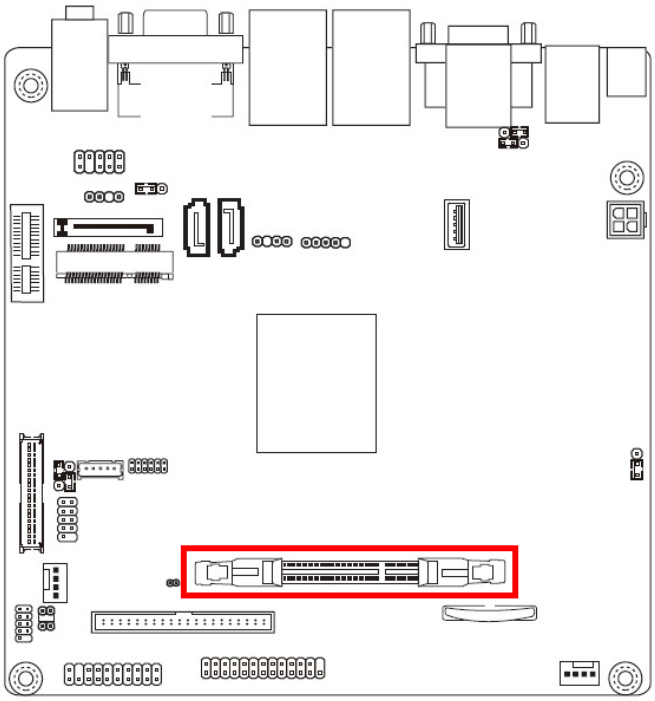
If you purchased a separate CPU heatsink and fan assembly, make sure that you have properly applied Thermal Interface Material to the CPU heatsink or CPU before you install the heatsink and fan assembly.

1.5 System Memory

1.5.1 Overview

The motherboard comes with one 204-pin Double Data Rate 3 Low voltage (DDR3L) Small Outline Dual Inline Memory Modules (SO-DIMM) sockets.

A DDR3L module has the same physical dimensions as a DDR SO-DIMM but has a 204-pin footprint compared to the 204-pin DDR2 DIMM. DDR3L DIMMs are notched differently to prevent installation on a DDR2 DIMM socket. The following figure illustrates the location of the sockets:



204-pin DDR3L DIMM sockets

Channel	Socket
Channel A	DIMM

1.5.2 Memory Configurations

You may install 1 GB, 2 GB, 4 GB and 8GB unbuffered ECC or non-ECC DDR3L SO-DIMMs into the SO-DIMM sockets using the memory configurations in this section.

- If you installed over 4GB memory modules, the system may detect less than 3GB of total memory because of address space allocation for other critical functions. This limitation applies to Windows 32-bit version operating system since it does not support PAE (Physical Address Extension) mode.
- If you install Windows 32-bit version operating system, we recommend that you install less than 3GB of total memory.
- For dual-channel configuration, the total size of memory module(s)

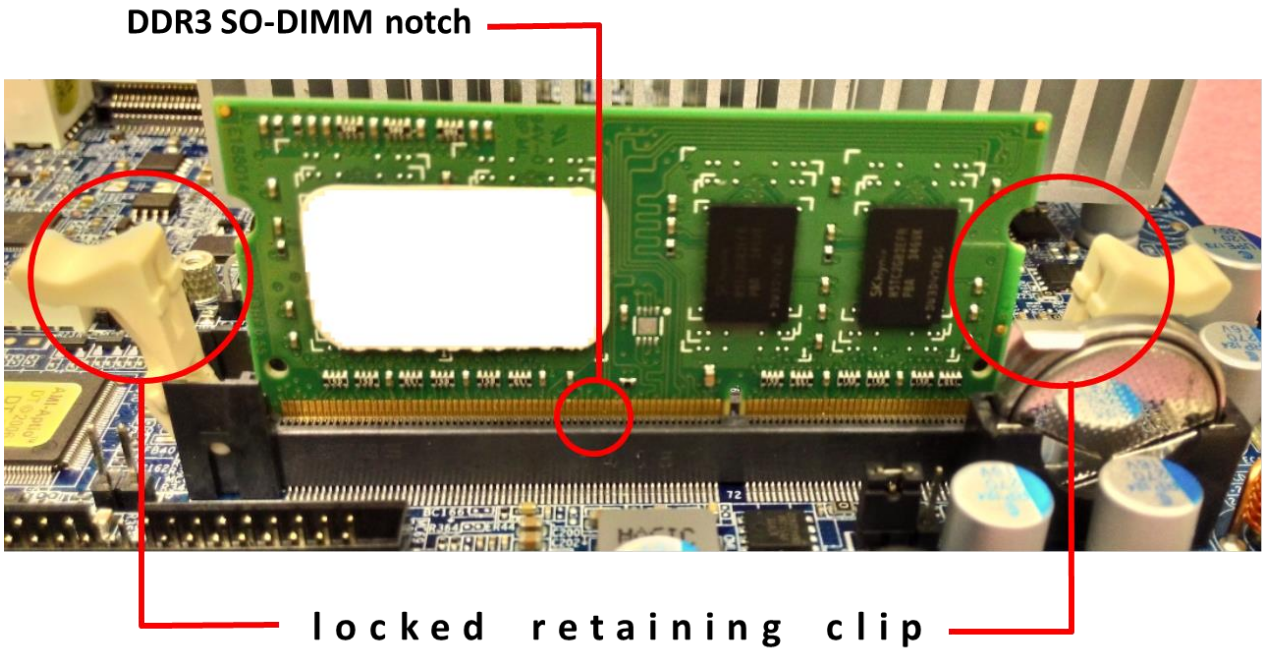
installed per channel must be the same for better performance (DIMMA1=DIMMB1). *This board does not support dual-channel mode.

- Always install DIMMs with the same CAS latency. For optimum compatibility, it is recommended that you obtain memory modules from the same vendor. Refer to the memory Qualified Vendors List on the next page for details.
- Due to CPU limitation, DIMM modules with 128 Mb memory chips or double-sided x16 memory chips are not supported in this motherboard.

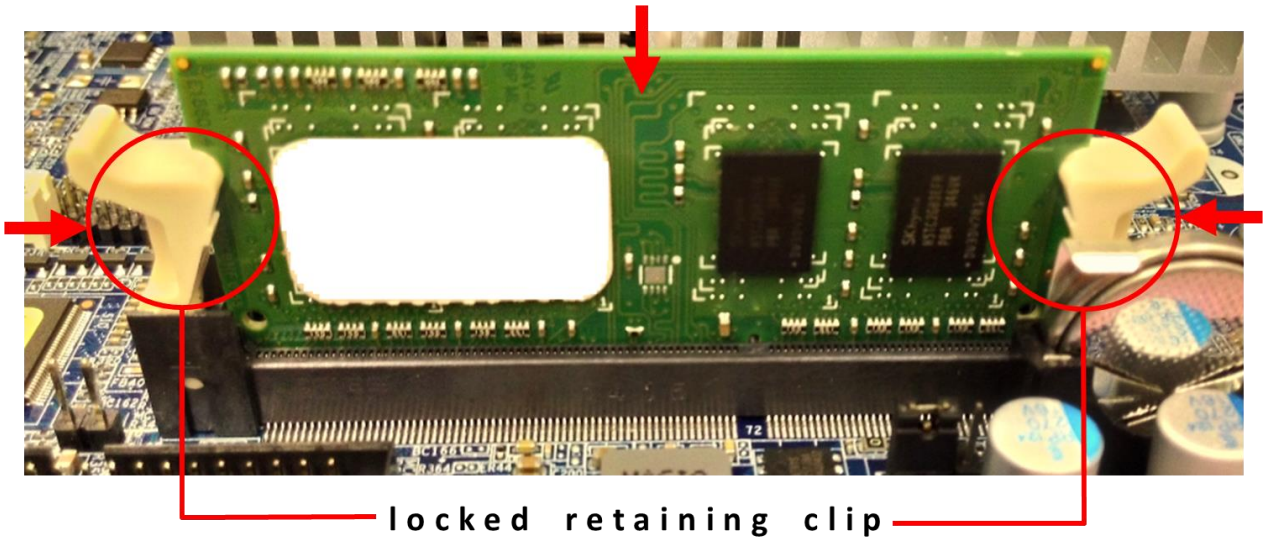
1.5.3 Installing a SO-DIMM

1. Unlock a DIMM socket by pressing the retaining clips outward.

2. Align a SO-DIMM on the socket such that the notch on the SO-DIMM matches the break on the socket.



3. Firmly insert the SO-DIMM into the socket until the retaining clips snap back in place and the SO-DIMM is properly seated.

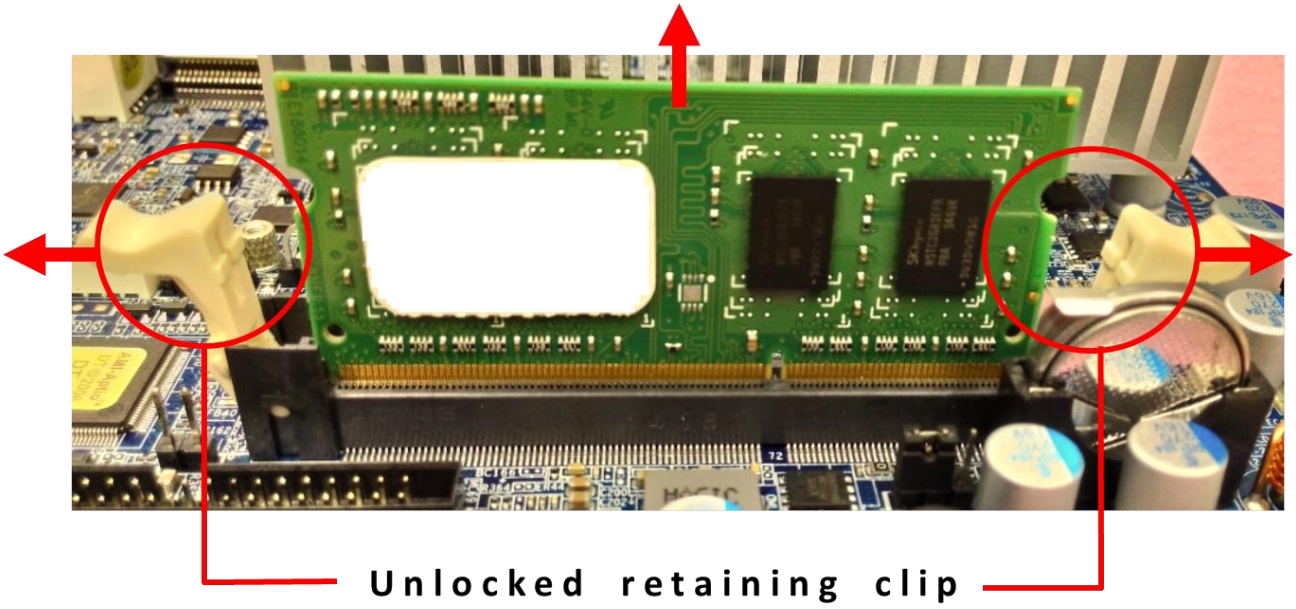


- A DDR3 SO-DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a SO-DIMM into a socket to avoid damaging the SO-DIMM.
- The DDR3 SO-DIMM sockets do not support DDR SO-DIMMs. DO NOT install DDR2 SO-DIMMs to the DDR3 SO-DIMM socket.

Make sure to unplug the power supply before adding or removing SO-DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

1.5.4 Removing a SO-DIMM

1. Simultaneously press the retaining clips downward to unlock the DIMM.
2. Remove the DIMM from the socket.



Support the SO-DIMM lightly with your fingers when pressing the retaining clips. The SO-DIMM might get damaged when it flips out with extra force.

1.6 Expansion Card

In the future, you may need to install expansion cards. The following sub-sections describe the slots and the expansion cards that they support.

Make sure to unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

1.6.1 Installing an Expansion Card

1. Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.
2. Remove the system unit cover (if your motherboard is already installed in a chassis).
3. Remove the bracket opposite the slot that you intend to use. Keep the screw for later use.
4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
5. Secure the card to the chassis with the screw you removed earlier.
6. Replace the system cover.

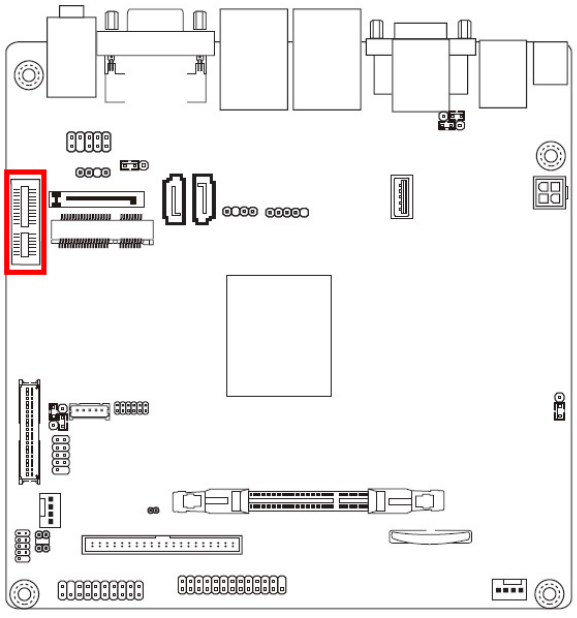
1.6.2 Configuring an Expansion Card

After installing the expansion card, configure it by adjusting the software settings.

1. Turn on the system and change the necessary BIOS settings, if any. See Chapter 2 for information on BIOS setup.
2. Assign an IRQ to the card if needed. Refer to the tables on the next page.
3. Install the software drivers for the expansion card.

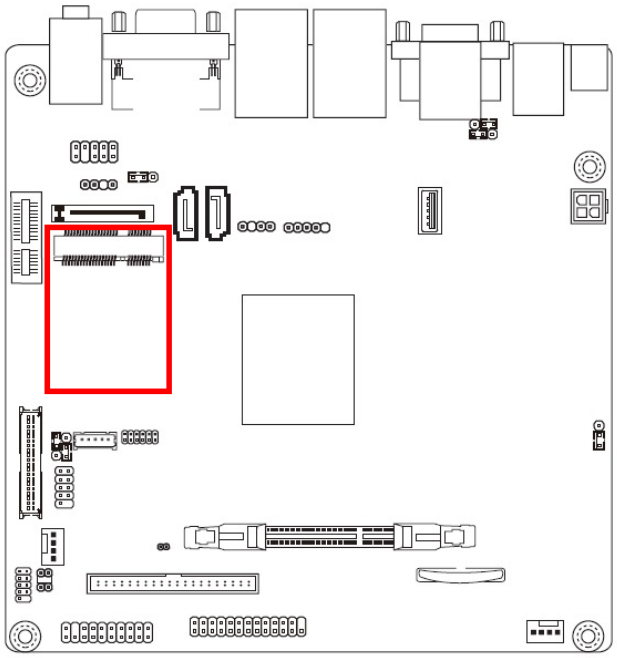
1.6.3 PCI Express x1 slot(PCIE)

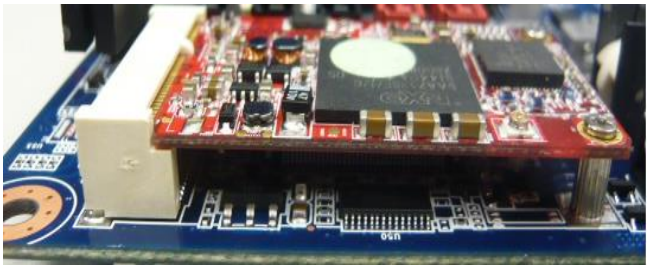
This motherboard supports one PCI Express x1. The following figure shows a PCI Express x 1 card installed on the PCI Express x1 slot.



1.6.4 MINI PCI Express(MPE)

This motherboard supports one MINI PCI Express. The following figure shows a MINI PCI Express card installed on the MINI PCI Express slot.





1.7 Jumpers

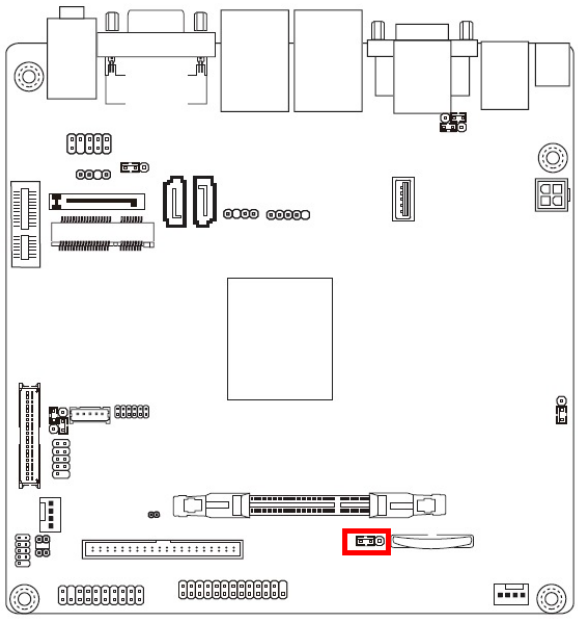
1.7.1 Clear CMOS (CLR_CMOS)

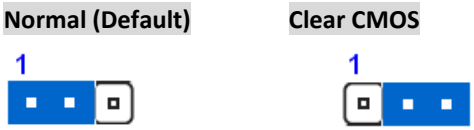
This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which includes system setup information such as system passwords.

To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Remove the onboard battery.
3. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5~10 seconds, then move the cap back to pins 1-2.
4. Re-install the battery.
5. Plug the power cord and turn ON the computer.
6. Hold down the <Del> key during the boot process and enter BIOS setup to re-enter data.

Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure!

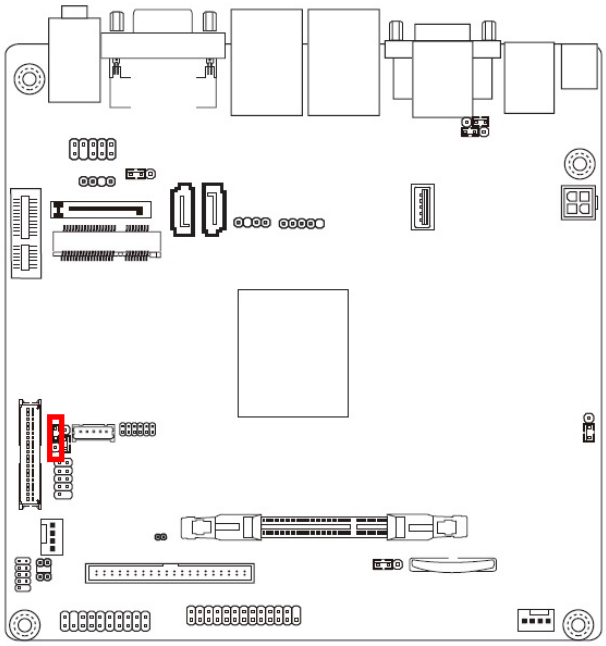




You do not need to clear the RTC when the system hangs due to overclocking. For system failure due to overclocking, use the C.P.R. (CPU Parameter Recall) feature. Shut down and reboot the system so the BIOS can automatically reset parameter settings to default values.

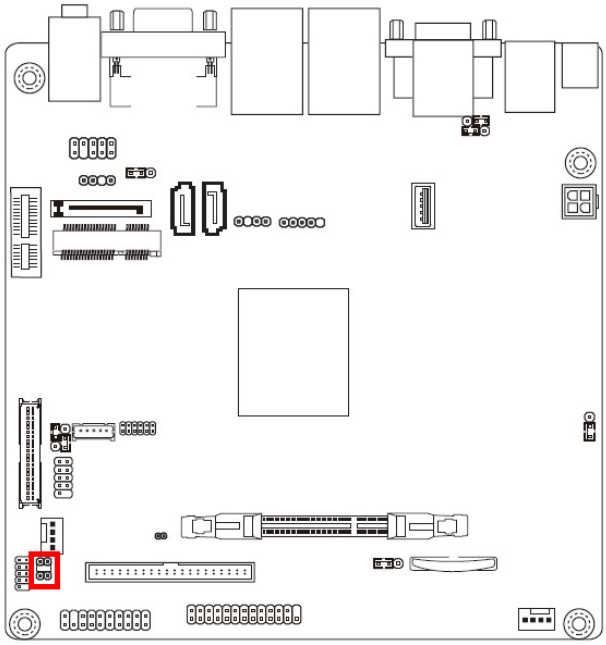
1.7.2 LVDS panel type select (VCON)

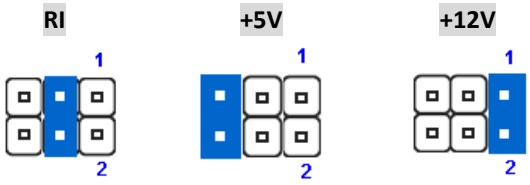
This jumper allows you to select the panel type of LVDS panel.



1.7.3 COM RI/+5V/+12V Select (COM_RI)

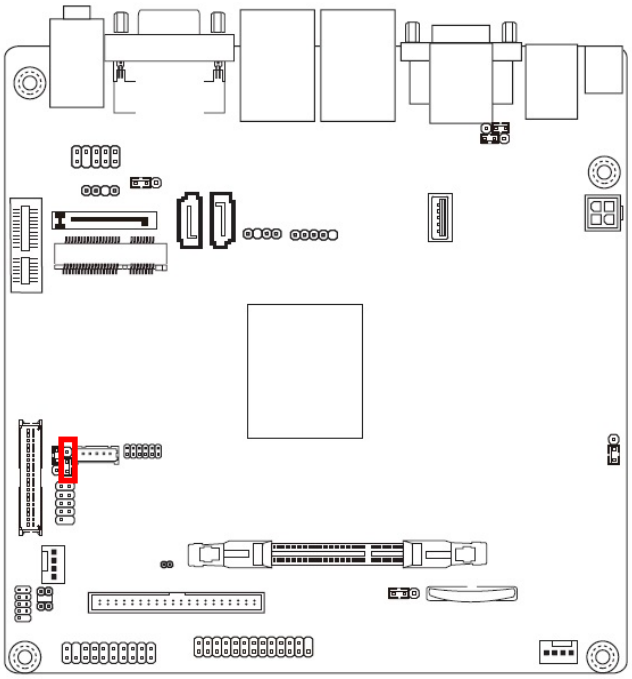
This jumper allows you to select the power mode of COM PORT

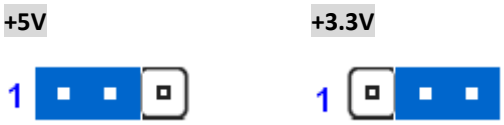




1.7.4 LVDS Back Light power selection (LCD_PWR1)

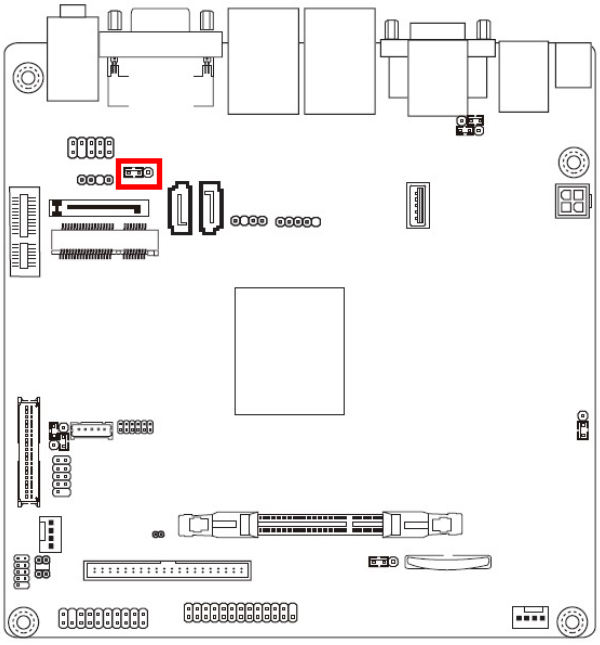
This jumper allows you to select the panel power mode of LVDS panel.





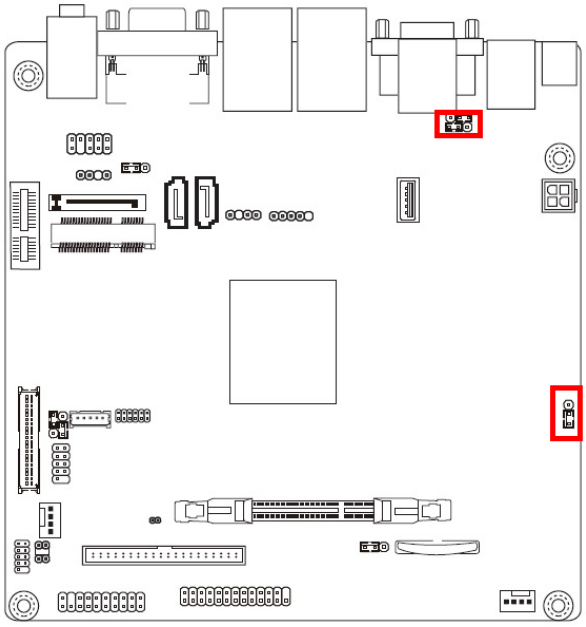
1.7.5 SATA DOM power selection (SATA_P7)

This jumper allows you to select the SATA DOM power mode of LVDS panel.



1.7.6 Cash drawer mode selection (JP1,JP2,JP3)

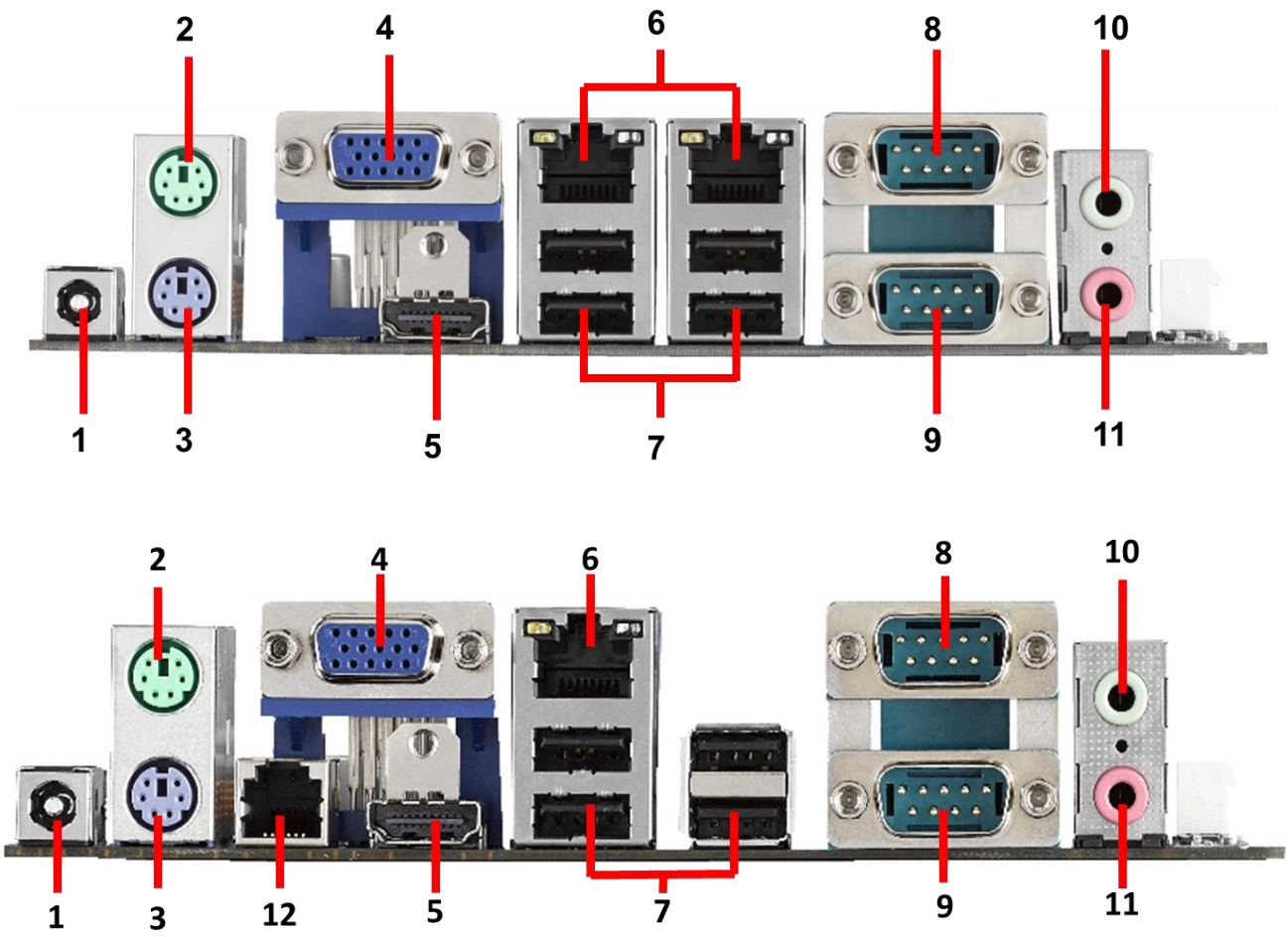
These jumpers allow you to select the cash drawer working mode. These jumpers are only for IMB-351PS.



JP1		
Pin1	**Pin2**	**Pin3**
GPI	CD_pin6	GND
JP2		
Pin1	**Pin2**	**Pin3**
24V	CR_PWR	12V
JP3		
Pin1	**Pin2**	**Pin3**
GPI	CD_pin3	CR_PWR

1.8 Connectors

1.8.1 Rear panel connectors



1. **DC jack.** This inlet is for 12V DC inlet
2. **PS/2 mouse port (green).** This port is for a PS/2 mouse.
3. **PS/2 keyboard port (purple).** This port is for a PS/2 keyboard.
4. **VGA port.** This 15-pin VGA port connects to a VGA monitor.
5. **HDMI port.** This 19-pin HDMI 1.3 port connects to a HDMI monitor.
6. **LAN (RJ-45) port.** This port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications. Dual LAN is only for IMB-351, Single LAN is only for IMB-351PS.

ACT/LINK LED		SPEED LED	
Status	Description	Status	Description
OFF	No link	OFF	10Mbps connection
Yellow	Link	Orange	100Mbps connection
Blinking	Data activity	Green	1Gbps connection

7. **USB 2.0 ports 1 ~ 4.** These four 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.

8. Serial connector. This 9-pin COM1 port is for serial devices.

9. Serial connector. This 9-pin COM2 port is for serial devices.

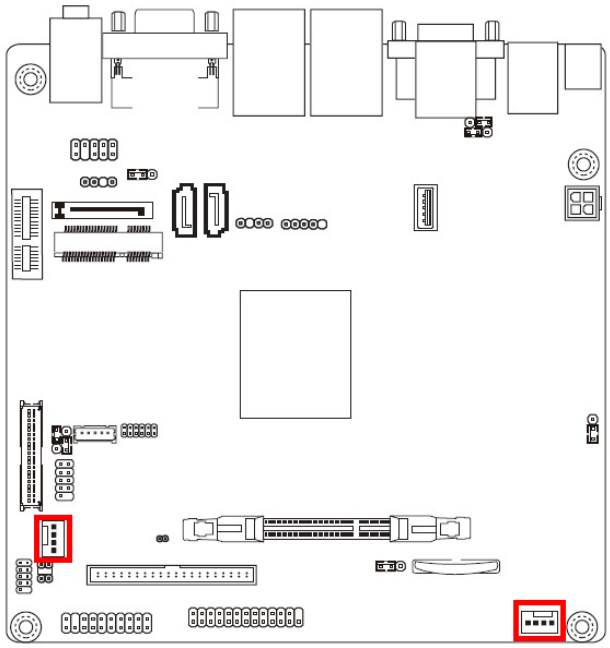
10. Line Out port (Green). This port connects a headphone or a speaker.

11. Microphone port (pink). This port connects a microphone.

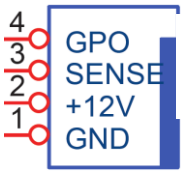
12. RJ11 Port. This port connects a cash drawer. (only for IMB-351PS)

1.8.2 CPU and System fan connectors (CPU_FAN, SYS_FAN)

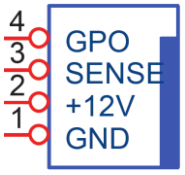
The fan connectors support cooling fans of 280mA (3.36 W max.) at 4800rpm or a total of 1A~2.22A (26.64W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.



SYS_FAN1



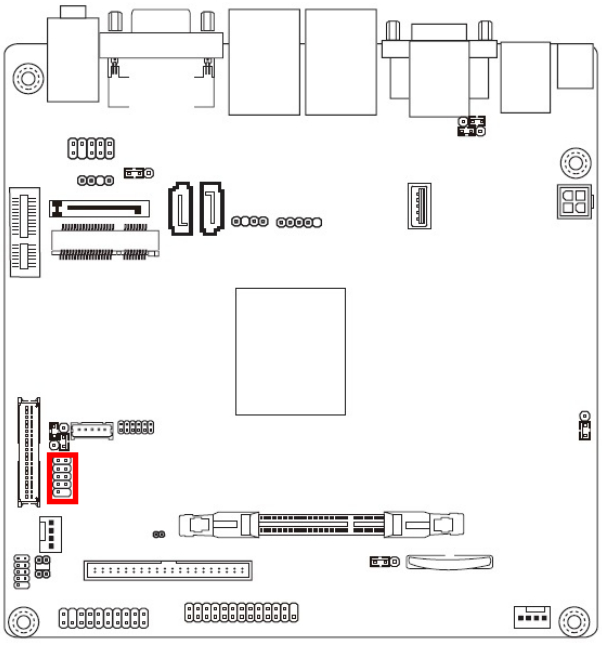
CPU_FAN



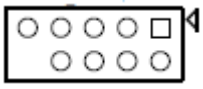
Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components.
These are not jumpers! DO NOT place jumper caps on the fan connectors.

1.8.3 System Panel (F_PANEL)

This connector is for a chassis-mounted front panel I/O module that supports power on /reset switch and HDD / Power LED indicate.



F_PANEL



1.HDDLED+	2.POWERLED+
3.HDDLED-	4.POWERLED-
5.GND	6.PWSWITCH
7.RESET	8.GND
9.NC	

- **ATX Power Button/Soft-off Button (Pin 6-8 PWRBT)**

  This 2-pin connector is for the system power button. Pressing the power button turns the system on or puts the system in sleep or soft-off mode depending on the BIOS settings. Pressing the power switch and holding it for more than four seconds while the system is ON turns the system OFF.

- **Reset Button (Pin 5-7 SYS_RST)**

  This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.

- **Power LED (Pin 2-4 PWRLED)**

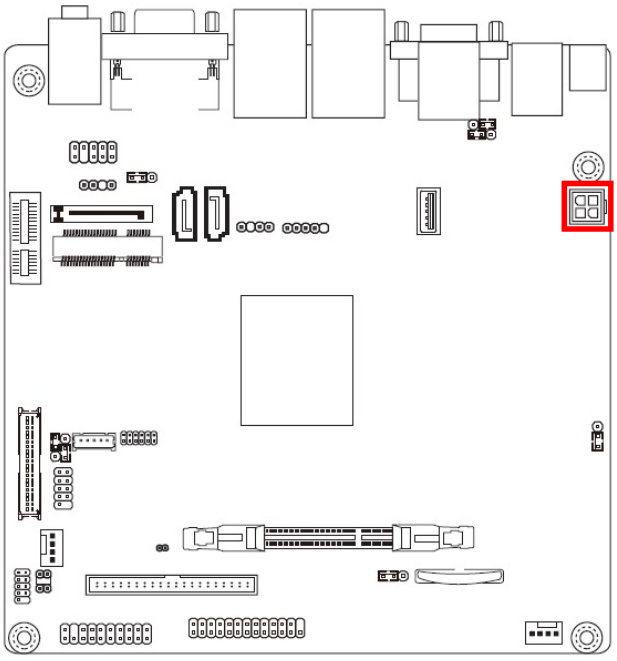
  This 2-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

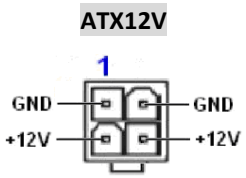
- **Hard Disk Drive Activity LED (Pin 1-3 HDLED)**

  This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.

1.8.4 ATX power connectors (ATX12V)

The connector is for ATX power supply plugs. The power supply plugs are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.

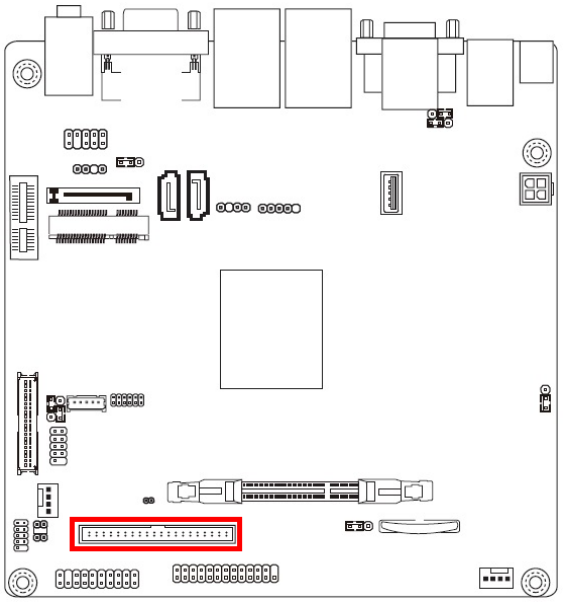




- Use of a PSU with a higher power output is recommended when configuring a system with more power-consuming devices. The system may become unstable or may not boot up if the power is inadequate.
- Make sure that your power supply unit (PSU) can provide at least the minimum power required by your system. See the table below for details.

1.8.5 Serial Port connectors (JCOM3-1)

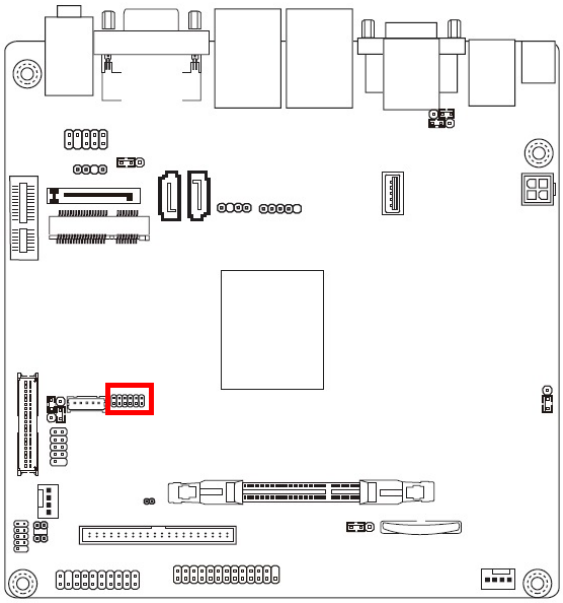
This connector is for four serial (COM) ports. Connect the serial port module cable to this connector then install the module to a slot opening at the back of the system chassis.



Pins	Result	Pins	Result
1	COM3_DCD#	2	COM3_DSR#
3	COM3_RXD	4	COM3_RTS#
5	COM3_TXD	6	COM3_CTS#
7	COM3_DTR#	8	RI3xPOWER
9	GND	10	GND
11	COM4_DCD#	12	COM4_DSR#
13	COM4_RXD	14	COM4_RTS#
15	COM4_TXD	16	COM4_CTS#
17	COM4_DTR#	18	COM4_RI#
19	GND	20	GND
21	COM5_DCD#	22	COM5_DSR#
23	COM5_RXD	24	COM5_RTS#
25	COM5_TXD	26	COM5_CTS#
27	COM5_DTR#	28	COM5_RI#
29	GND	30	GND
31	JDDCD6#	32	COM6_DSR#
33	JRRXD6	34	COM6_RTS#
35	JTTXD6	36	COM6_CTS#
37	JDDTR6#	38	COM6_RI#
39	GND	40	GND

1.8.6 GPIO Connector (DIO)

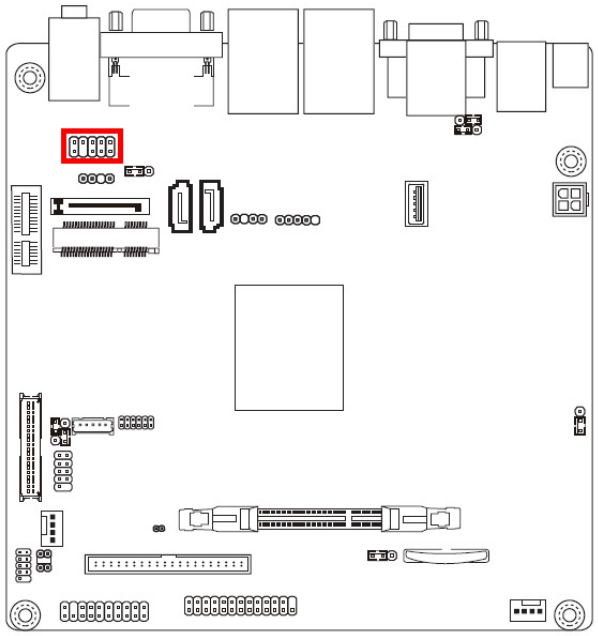
This connector is for GPIO function.



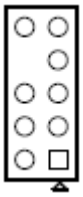
Pins	Result	Pins	Result
1	GPIO_S0_SC17_DI	2	GPIO_S0_SC21_DO
3	GPIO_S0_SC18_DI	4	GPIO_S0_SC22_DO
5	GPIO_S0_SC19_DI	6	GPIO_S0_SC23_DO
7	GPIO_S0_SC20_DI	8	GPIO_S0_SC24_DO
9	5VSB	10	GND

1.8.7 Audio Mic.-In & Line-Out Connector (F_AUDIO)

This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC '97 (optional) audio standard. Connect one end of the front panel audio I/O module cable to this connector.



F_AUDIO

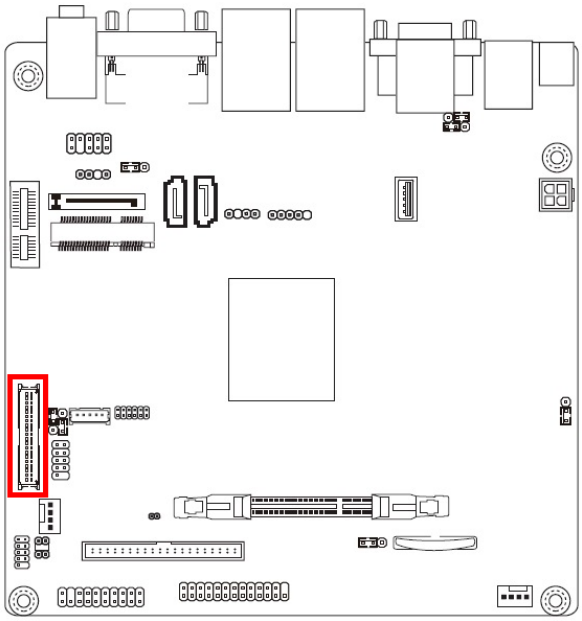


Pins	Result	Pins	Result
1	MIC2_L	2	AUGND
3	MIC2_R	4	FP_AUD_DETECT
5	HPOUT-R	6	MIC2-JD
7	AUGND	8	NC
9	HPOUT-L	10	HPOUT-JD

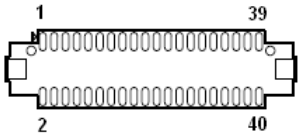
For motherboards with the optional HD Audio feature, we recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high‑definition audio capability.

1.8.8 LVDS Connector (LVDS)

The connector is for 24-bit dual channel LVDS panel.



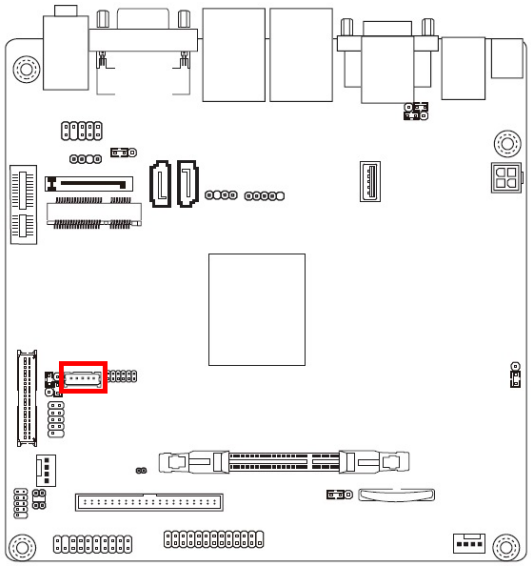
LVDS1



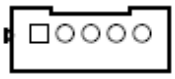
Pins	Result	Pins	Result
1	LCD_VDD	2	LCD_VDD
3	GND	4	GND
5	LCD_VDD	6	LCD_VDD
7	TXO0-	8	TXE0-
9	TXO0+	10	TXE0+
11	GND	12	GND
13	TXO1-	14	TXE1-
15	TXO1+	16	TXE1+
17	GND	18	GND
19	TXO2-	20	TXE2-
21	TXO2+	22	TXE2+
23	GND	24	GND
25	TXOC-	26	TXEC-
27	TXOC+	28	TXEC+
29	GND	30	GND
31	DDC_CLK	32	DDC_DATA
33	GND	34	GND
35	TXO3-	36	TXE3-
37	TXO3+	38	TXE3+
39	BKLT_EN	40	VCON

1.8.9 LCD Inverter Connector (LVDSPW)

The connector is for the control of internal LVDS brightness.

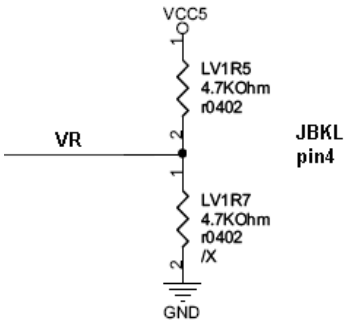


JBKL

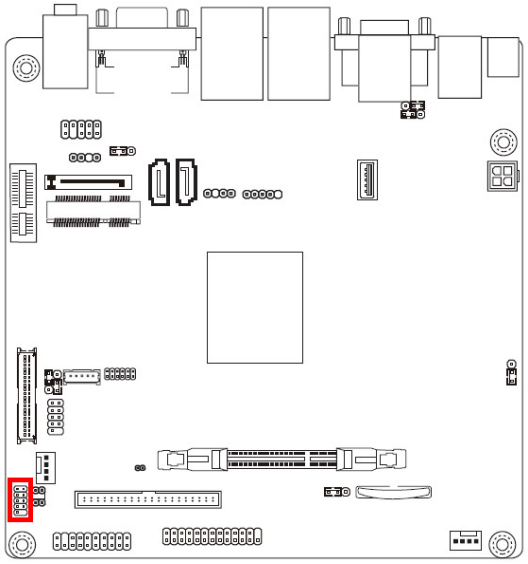


1.+12V
2.GND
3.ENBKL
4.PWM
5.+5V

- **Signal Description**

Signal	Signal Description
PWM	For inverter with adjustable Backlight function, it is possible to control the LCD brightness through the **PWM** signal.  Vadj=0.75V ~ 4.25V (Recommended: 4.7KΩ, > 1/16W)
ENBKL	LCD backlight ON/OFF control signal

1.8.10 LPC Connector (LPC_DEBUG)

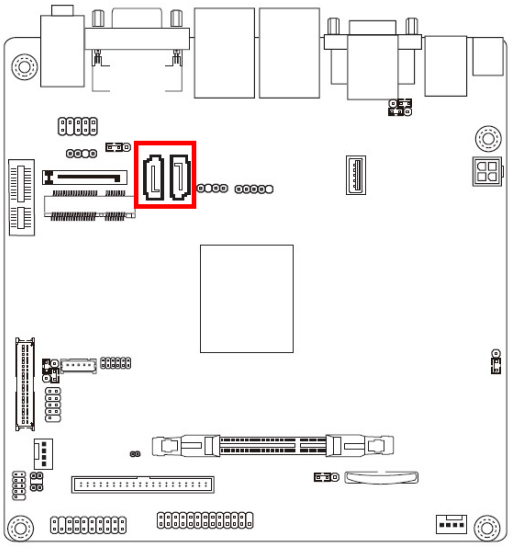


LPC_DEBUG

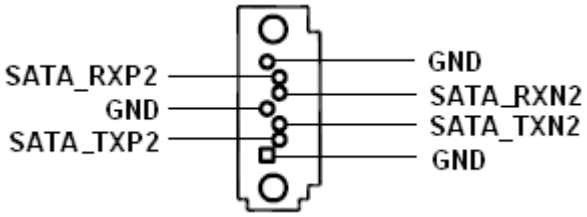
Pins	Result	Pins	Result
1	LPC_AD3	2	VCC3
3	LPC_AD2	4	LPC_FRAME_L
5	LPC_AD1	6	PCIRST1_L
7	LPC_AD0	8	CLK
9	GND	10	NC

1.8.11 Serial ATA II Connector (SATA1, SATA2)

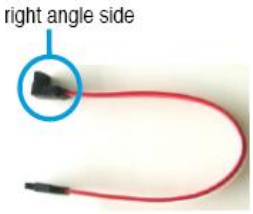
These connectors support SATA 2.0 and are for the Serial ATA signal cables for Serial ATA hard disk drives.



SATA1、SATA2

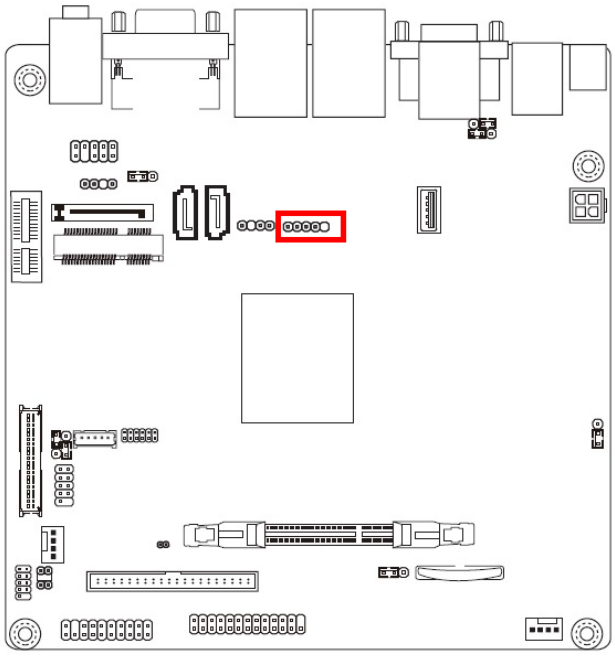


Connect the right-angle side of SATA signal cable to SATA device. Or you may connect the right-angle side of SATA cable to the onboard SATA port to avoid mechanical conflict with large graphics cards.



1.8.12 USB connectors (F_USB)

These connectors are for USB 2.0 ports. Connect the optional USB module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed.

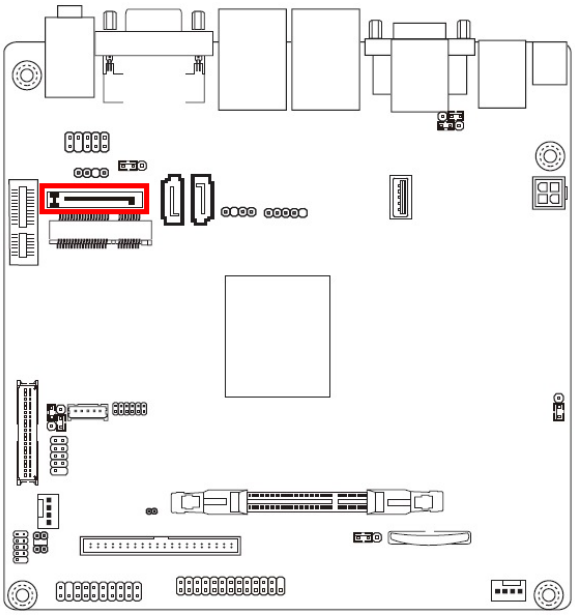


F_USB

Pins	Result
1	PS2_USB
2	USB_DN2_CMK
3	USB_DP2_CMK
4	GND
5	NC

1.8.13 SATA power connector (SATA_PWR)

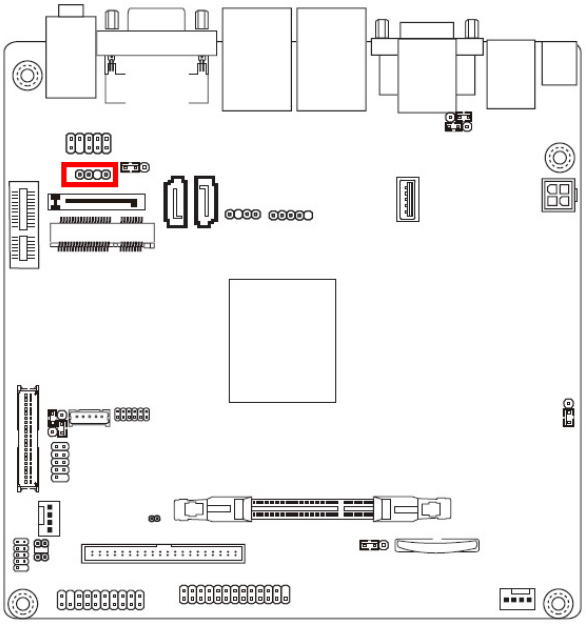
This connector support SATA device power



Pins	Result
1	3.3V
2	3.3V
3	3.3V
4	GND
5	GND
6	GND
7	5V
8	5V
9	5V
10	GND
11	GND
12	GND
13	12V
14	12V
15	12V

1.8.14 Speaker Connector (SPKR)

This connector supports speaker signal.

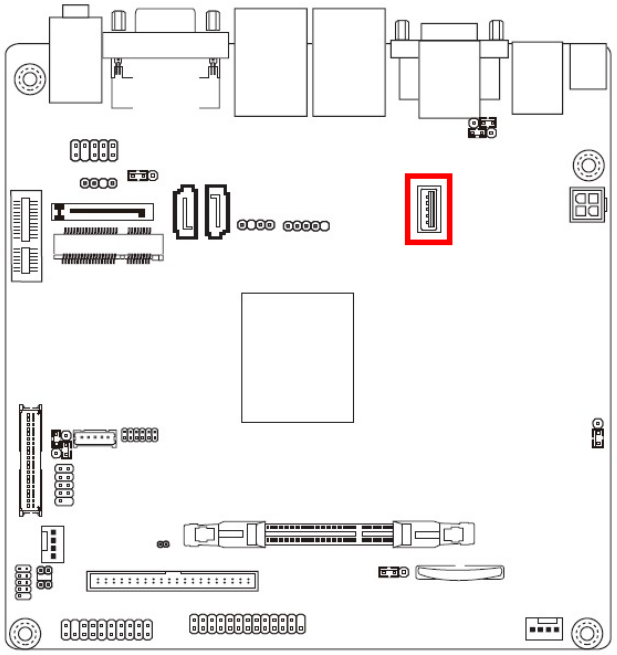


SPKR

Pins	Result
1	SPK-LL-
2	SPK-LL+
3	SPK-RR-
4	SPK-RR+

1.8.15 USB 3.0 Connector (USB3.0)

This connector provides USB Rev. 3.0 supporting transmission rate up to 5Gbps and fuse protect.

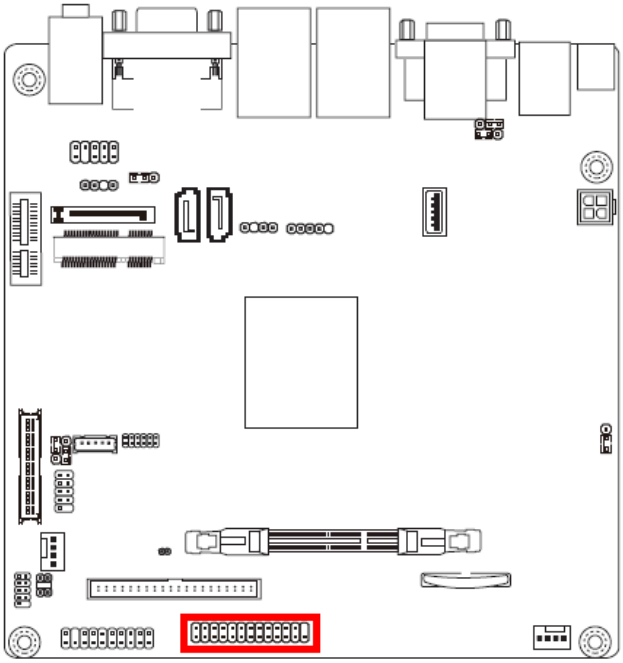


USB3.0

Pins	Result
1	VCC
2	-DATA1
3	+DATA1
4	GND
5	-SRX1
6	+SRX1
7	GND
8	-STX1
9	+STX1

1.8.16 Parallel Port Header (LPT)

This header is for parallel port function.



Pins	Result	Pins	Result
1	-NSTB	14	-AFD
2	PD0	15	-ERROR
3	PD1	16	-INIT
4	PD2	17	-SLIN
5	PD3	18	GND
6	PD4	19	GND
7	PD5	20	GND
8	PD6	21	GND
9	PD7	22	GND
10	ACK_L	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT	26	GND

This chapter tells how to change the system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

2 BIOS Setup

Chapter 2 - BIOS Setup

2.1 BIOS Setup Program

This motherboard supports a programmable firmware chip that you can update using the provided utility. Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to “Run Setup.” This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the firmware hub.

The firmware hub on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press <Del> during the Power-On-Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

If you wish to enter Setup after POST, restart the system by pressing <Ctrl+Alt+Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys.

- The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Optimized Defaults** from the BIOS menu screen.
- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the system builder’s website to download the latest BIOS file for this motherboard

2.1.1 Legend Box

The keys in the legend bar allow you to navigate through the various setup menus

Key(s)	Function Description
←	Select Screen
↑↓	Select Item
+ -	Change Option / Field/ Value
Enter	Go to Sub Screen
PGDN	Next Page
PGUP	Previous Page
HOME	Go to Top of Screen
END	Go to Bottom of Screen
F1	General Help
F2	Previous Value
F3	Optimized Default
F4	Save & Exit Setup
ESC	Exit

2.1.2 List Box

This box appears only in the opening screen. The box displays an initial list of configurable items in the menu you selected.

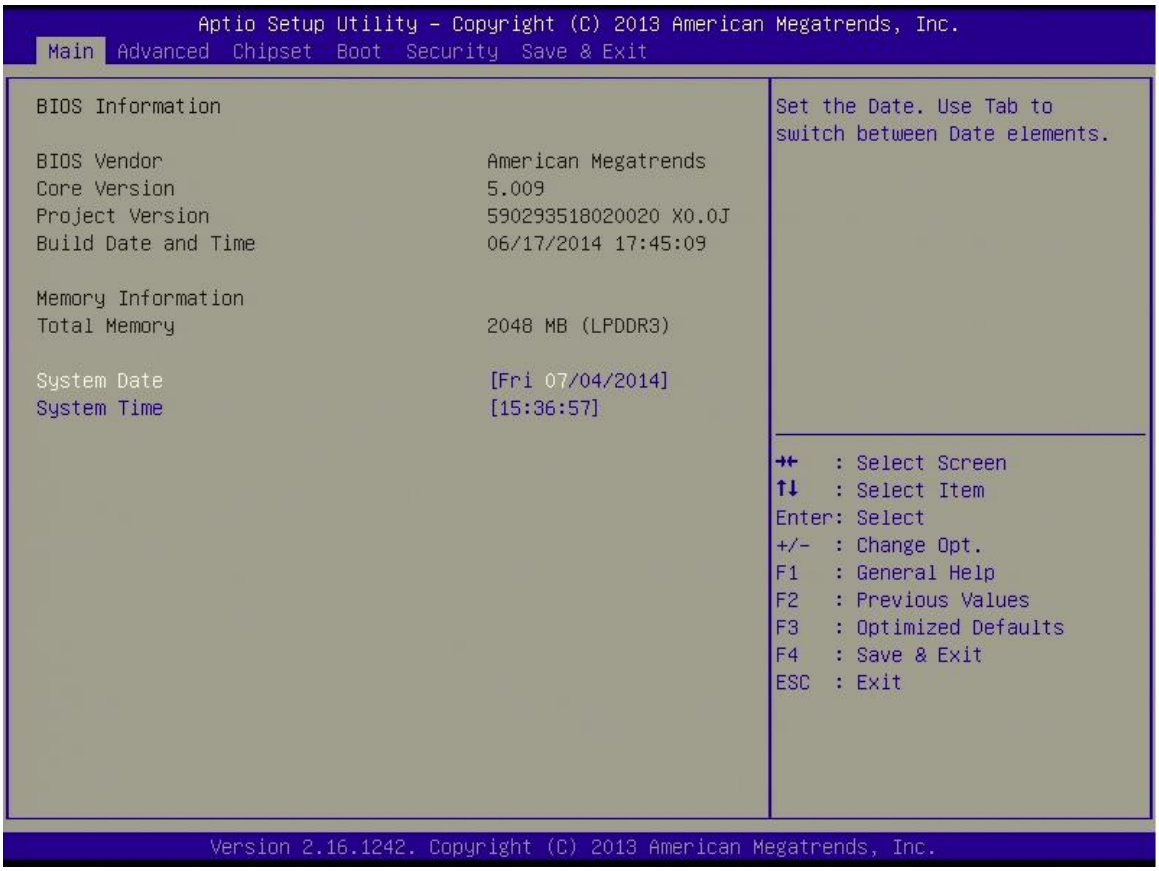
2.1.3 Sub-menu

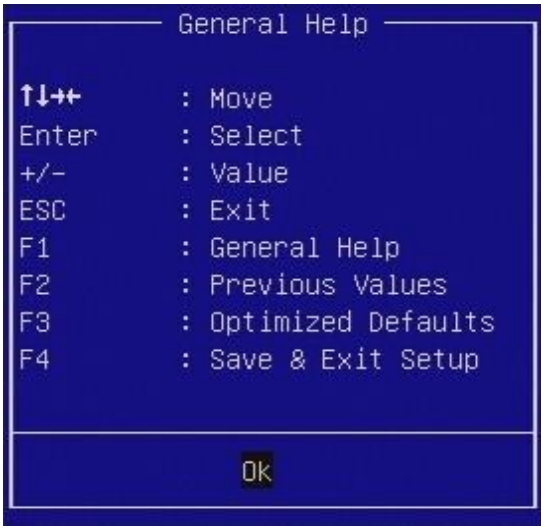
Note that a right pointer symbol appears to the left of certain fields. This pointer indicates that you can display a sub-menu from this field. A sub-menu contains additional options for a field parameter. To display a sub-menu, move the highlight to the field and press <Enter>. The sub-menu appears. Use the legend keys to enter values and move from field to field within a sub-menu as you would within a menu. Use the <Esc> key to return to the main menu.

Take some time to familiarize yourself with the legend keys and their corresponding functions. Practice navigating through the various menus and submenus. If you accidentally make unwanted changes to any of the fields, press <F9> to load the optimal default values. While moving around through the Setup program, note that explanations appear in the Item Specific Help window located to the right of each menu. This window displays the help text for the currently highlighted field.

2.2 BIOS Menu Screen

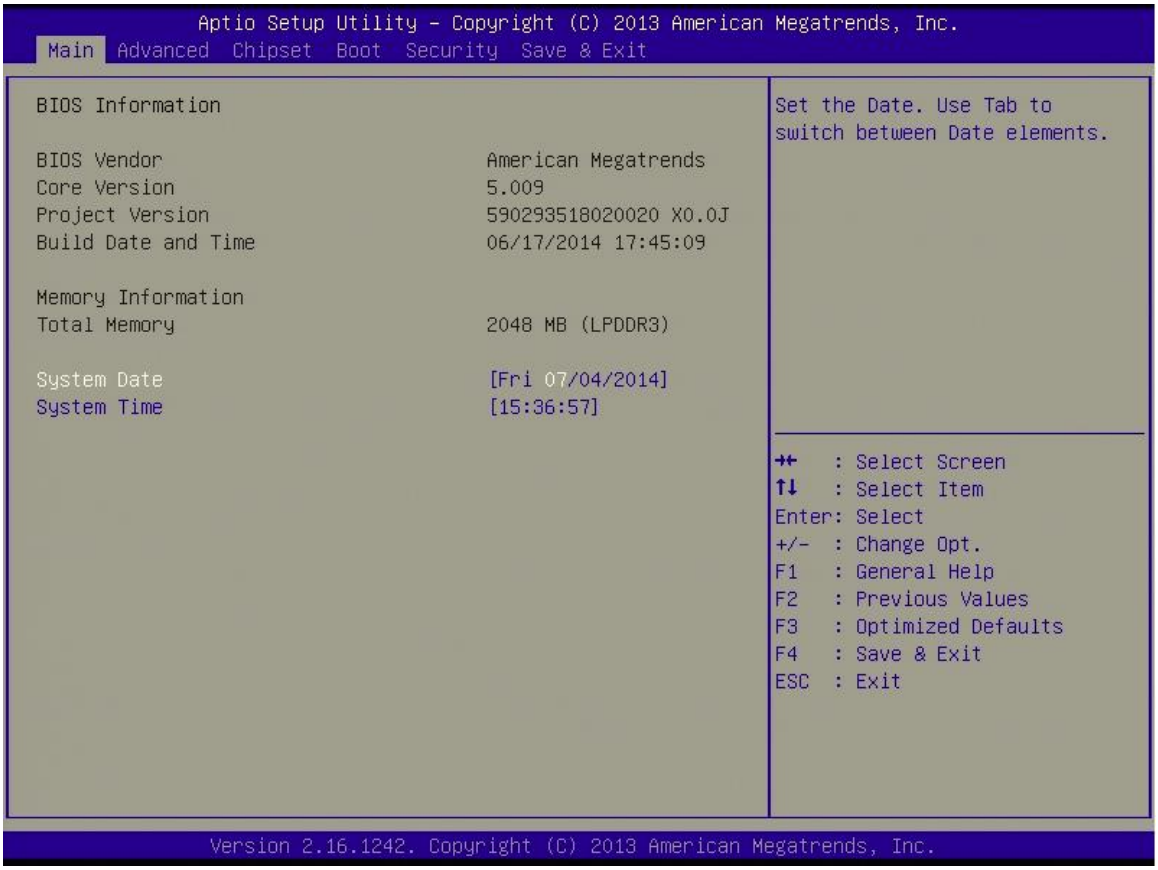
When you enter the BIOS, the following screen appears. The BIOS menu screen displays the items that allow you to make changes to the system configuration. To access the menu items, press the up/down/right/left arrow key on the keyboard until the desired item is highlighted, then press [Enter] to open the specific menu.


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
BIOS Information
BIOS Vendor American Megatrends
Core Version 5.009
Project Version 590293518020020 X0.0J
Build Date and Time 06/17/2014 17:45:09
Memory Information
Total Memory 2048 MB (LPDDR3)
System Date [Fri 07/04/2014]
System Time [15:36:57]
Set the Date. Use Tab to switch between Date elements.
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.



2.3 Main Setup

This menu gives you an overview of the general system specifications. The BIOS automatically detects the items in this menu. Use this menu for basic system configurations, such as time, date etc.


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
BIOS Information
BIOS Vendor American Megatrends
Core Version 5.009
Project Version 590293518020020 X0.0J
Build Date and Time 06/17/2014 17:45:09
Memory Information
Total Memory 2048 MB (LPDDR3)
System Date [Fri 07/04/2014]
System Time [15:36:57]
Set the Date. Use Tab to switch between Date elements.
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

- **System Date**

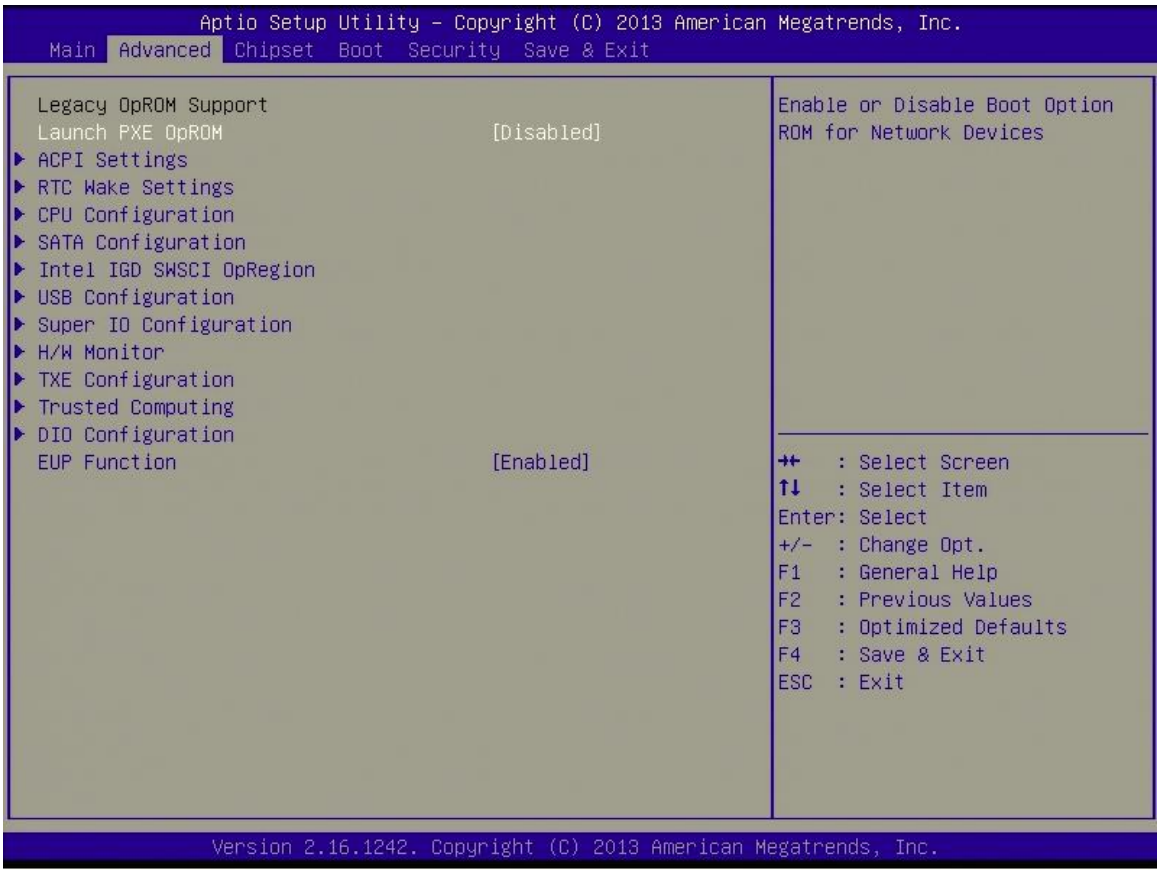
The date format is <Date>,<Month>,<Day>,<Year>.

- **System Time**

The time format is <Hour>,<Minute>,<Second>.

2.4 Advanced BIOS Setup

Select the Advanced tab from the setup screen to enter the Advanced BIOS Setup screen.
You can select any of the items in the left frame of the screen, such as Chipset configuration, to go to the sub menu for that item. You can display an Advanced BIOS Setup option by highlighting it using the <Arrow> keys. All Advanced BIOS Setup options are described in this section. The Advanced BIOS Setup screen is shown below. The sub menus are described on the following pages.

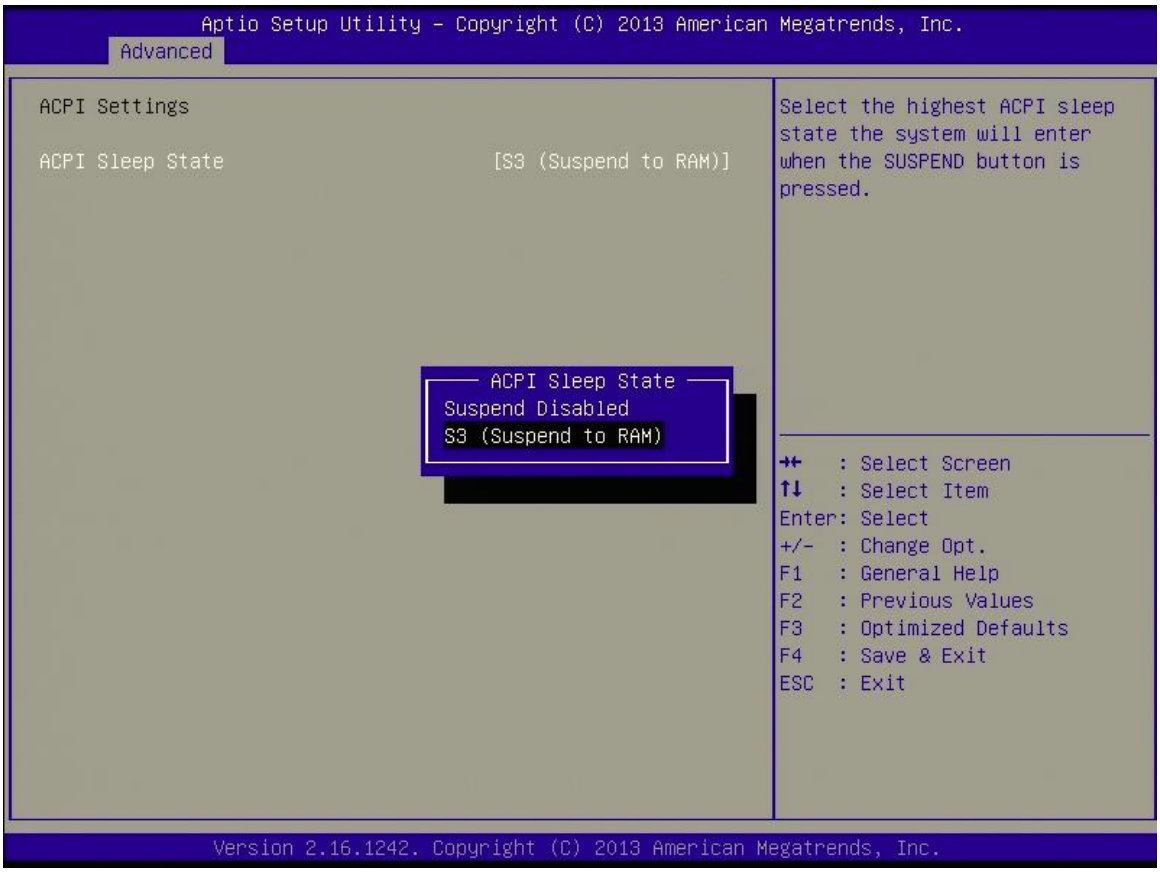


Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.

2.4.1 Launch PXE OpROM

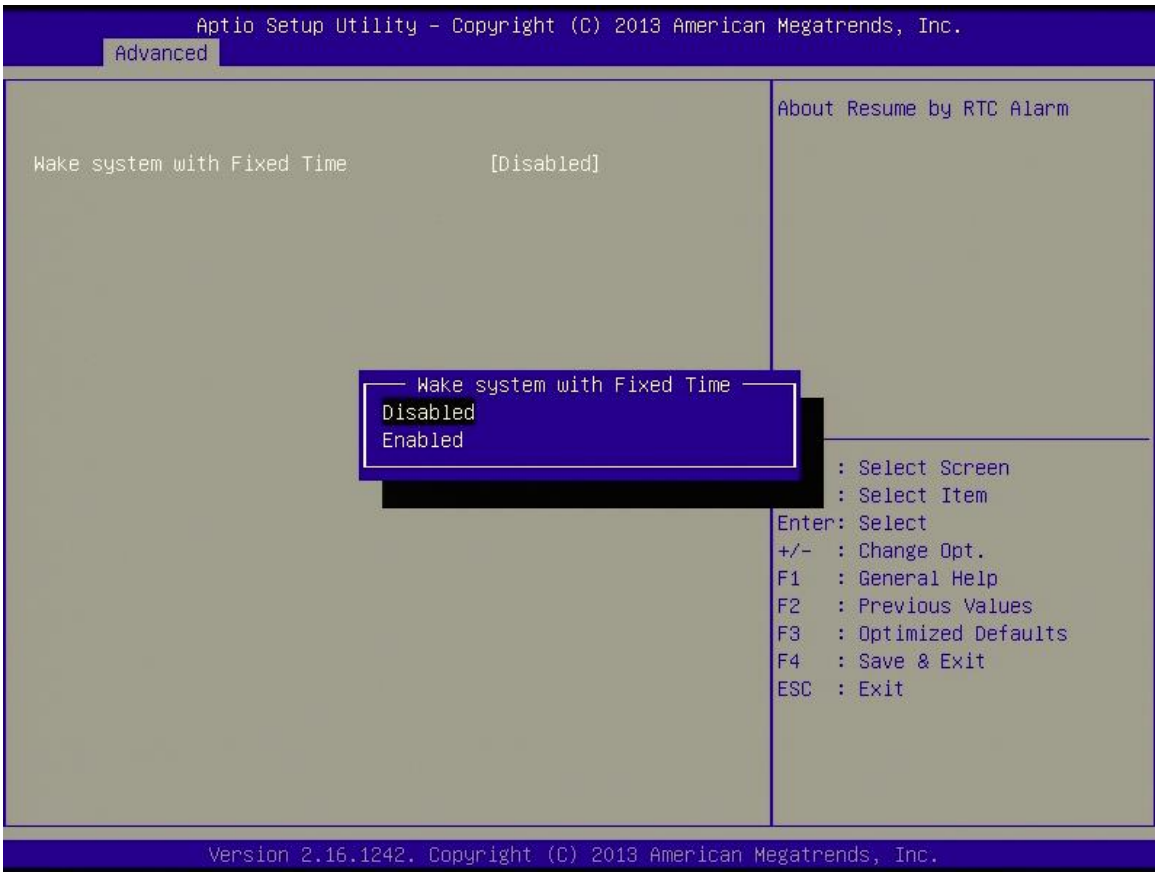
Configuration options: [Disable] [enable]

2.4.2 ACPI Settings [S3 (suspend to RAM)]


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Advanced
ACPI Settings
ACPI Sleep State [S3 (Suspend to RAM)]
Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
ACPI Sleep State
Suspend Disabled
S3 (Suspend to RAM)
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Select the highest ACPI sleep state the system will enter the SUSPEND button is press. Configuration options: [Suspend Disable] [S3 (suspend to RAM)]

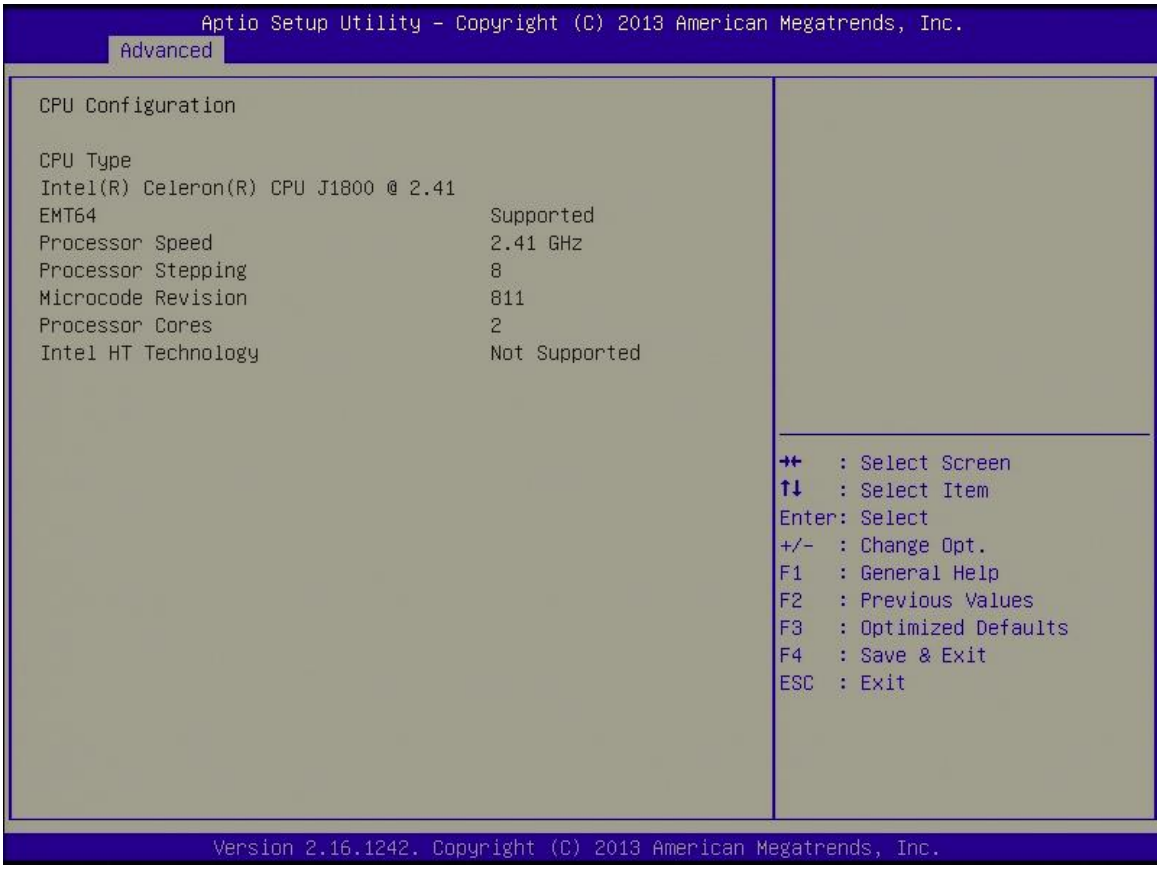
2.4.3 RTC Wake Setting


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Advanced
About Resume by RTC Alarm
Wake system with Fixed Time [Disabled]
Wake system with Fixed Time
Disabled
Enabled
: Select Screen
: Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

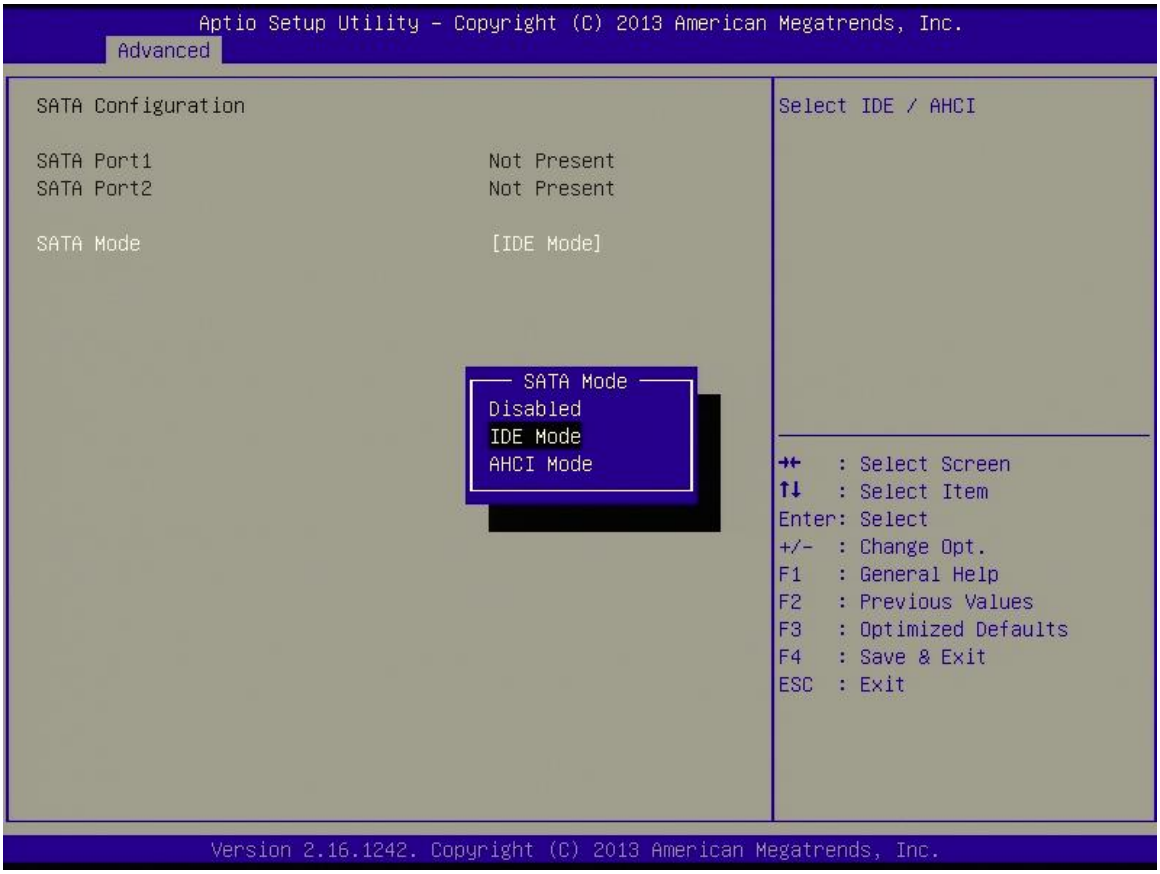
Resume on RTC Alarm: [Disable]

Enable or disable system wake on alarm even. When enabled, system will wake upon the hr/min/sec specified.

2.4.4 CPU Configuration


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Advanced
CPU Configuration
CPU Type
Intel(R) Celeron(R) CPU J1800 @ 2.41
EMT64 Supported
Processor Speed 2.41 GHz
Processor Stepping 8
Microcode Revision 811
Processor Cores 2
Intel HT Technology Not Supported
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

2.4.5 SATA Configuration



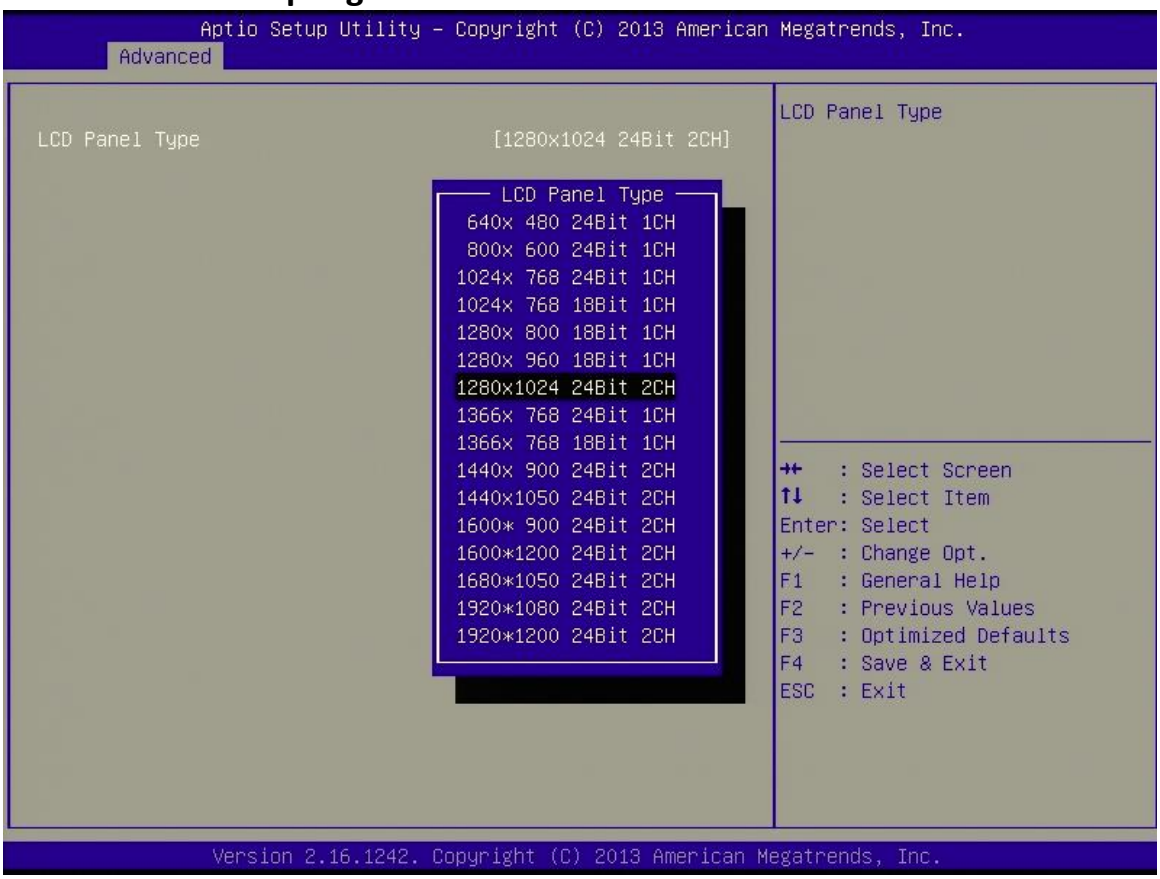
SATA Port1 / SATA Port2

SATA Ports (1-2) device names if present and enable

SATA Mode [IDE Mode]

Select a configuration for SATA controller.

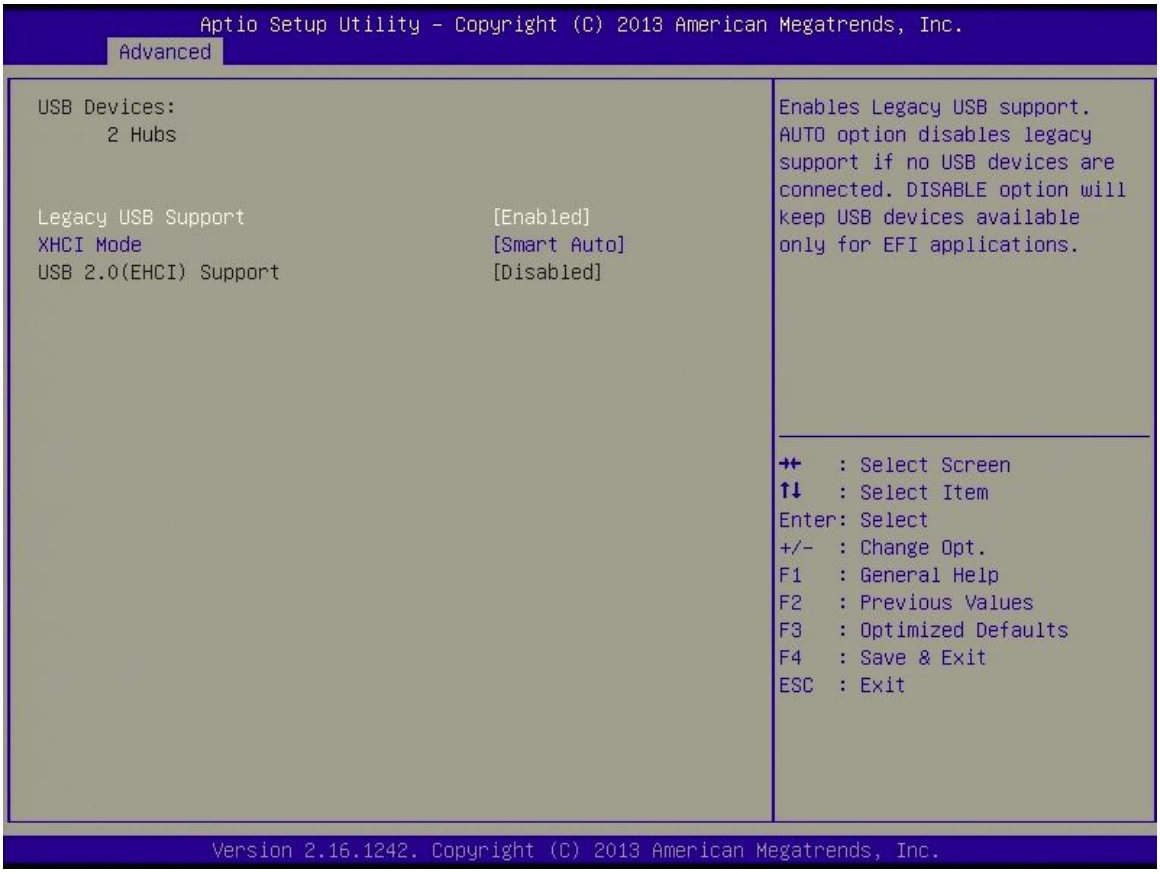
2.4.6 Intel IGD SWSCI OpRegion



LCD Panel Type [1280x1024 24Bit 2CH]

This BIOS feature allows you to select the type of LCD panel connected to the motherboard's built-in graphics chip.

2.4.7 USB Configuration


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Advanced
USB Devices:
2 Hubs
Legacy USB Support [Enabled]
XHCI Mode [Smart Auto]
USB 2.0(EHCI) Support [Disabled]
Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

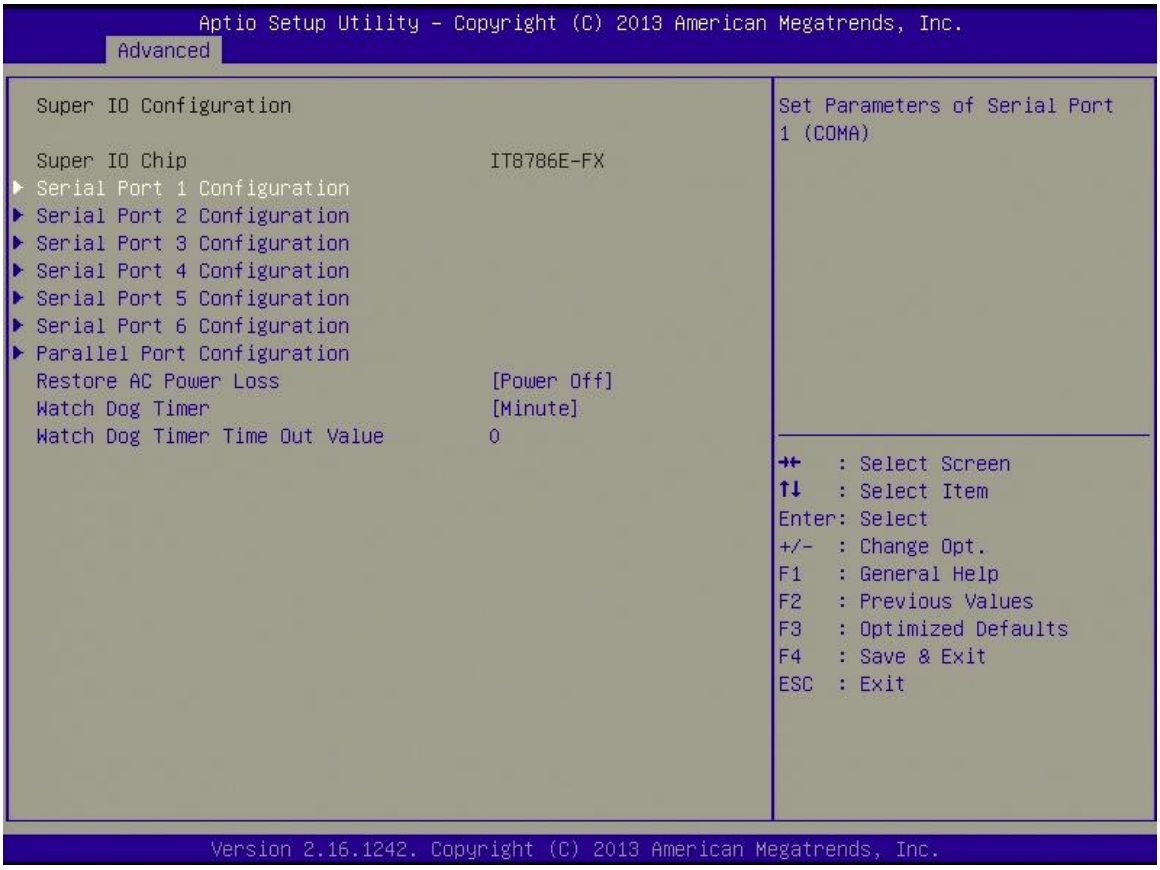
Legacy USB support [Enable]

Enable Legacy USB support. Disable option will keep USB device available only for EFI application.

XHCI Mode [Smart Auto]

Enable option allow XHCI mode support. Disable option will keep XHCI mode disable. Auto option will auto detect which mode is better. Smart auto option will auto detect the sutiable mode for device plugged.

2.4.8 Super IO Configuration


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Advanced
Super IO Configuration
Super IO Chip IT8786E-FX
Serial Port 1 Configuration
Serial Port 2 Configuration
Serial Port 3 Configuration
Serial Port 4 Configuration
Serial Port 5 Configuration
Serial Port 6 Configuration
Parallel Port Configuration
Restore AC Power Loss [Power Off]
Watch Dog Timer [Minute]
Watch Dog Timer Time Out Value 0
Set Parameters of Serial Port 1 (COMA)
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Serial Port 1 Configuration [Enable]

Set parameters of serial port 1 (COM1)

Change settings [Auto]

Select an optimal setting for super IO device

Serial Port 2 Configuration [Enable]

Set parameters of serial port 2 (COM2)

Change settings [Auto]

Select an optimal setting for super IO device

Serial Port 3 Configuration [Enable]

Set parameters of serial port 3 (COM3)

Change settings [Auto]

Select an optimal setting for super IO device

Serial Port 4 Configuration [Enable]

Set parameters of serial port 4 (COM4)

Change settings [Auto]

Select an optimal setting for super IO device

Serial Port 5 Configuration [Enable]

Set parameters of serial port 5 (COM5)

Change settings [Auto]

Select an optimal setting for super IO device

Serial Port 6 Configuration [Enable]

Set parameters of serial port 6 (COM6)

Change settings [Auto]

Select an optimal setting for super IO device

Parallel Port [Enable]

Set parameters of LPT port

Change Settings [Auto]

Select an optimal setting for super IO device

Restore AC Power Loss [Power OFF]

Set the state after power loss.

Resume on Ring [Disable]

Set the state after modem ring on

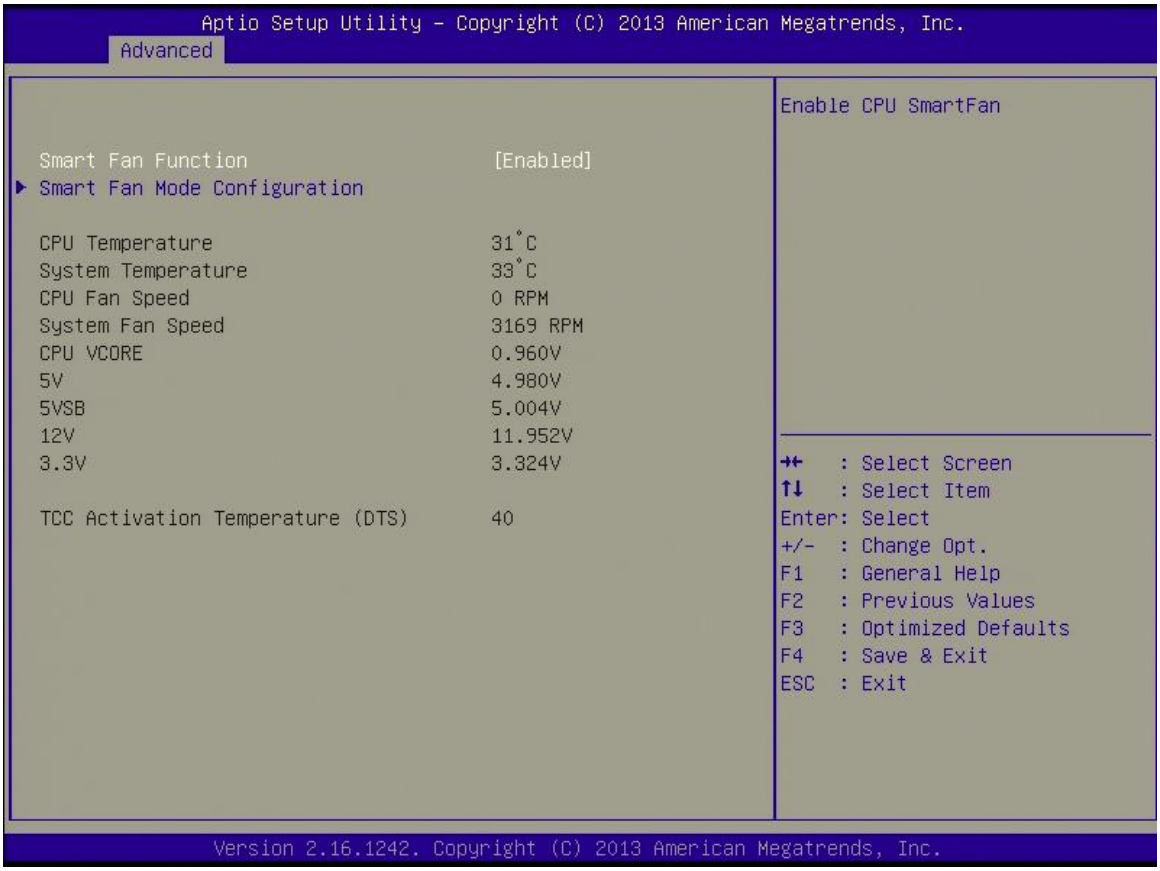
Watch Dog Timer [Minute]

Select watch dog count mode second/minute.

Watch Dog Time-out Value

Timer will start to count from end of POST .00- Time out Disable.

2.4.9 H/W Monitor



Smart Fan Function [Enable]

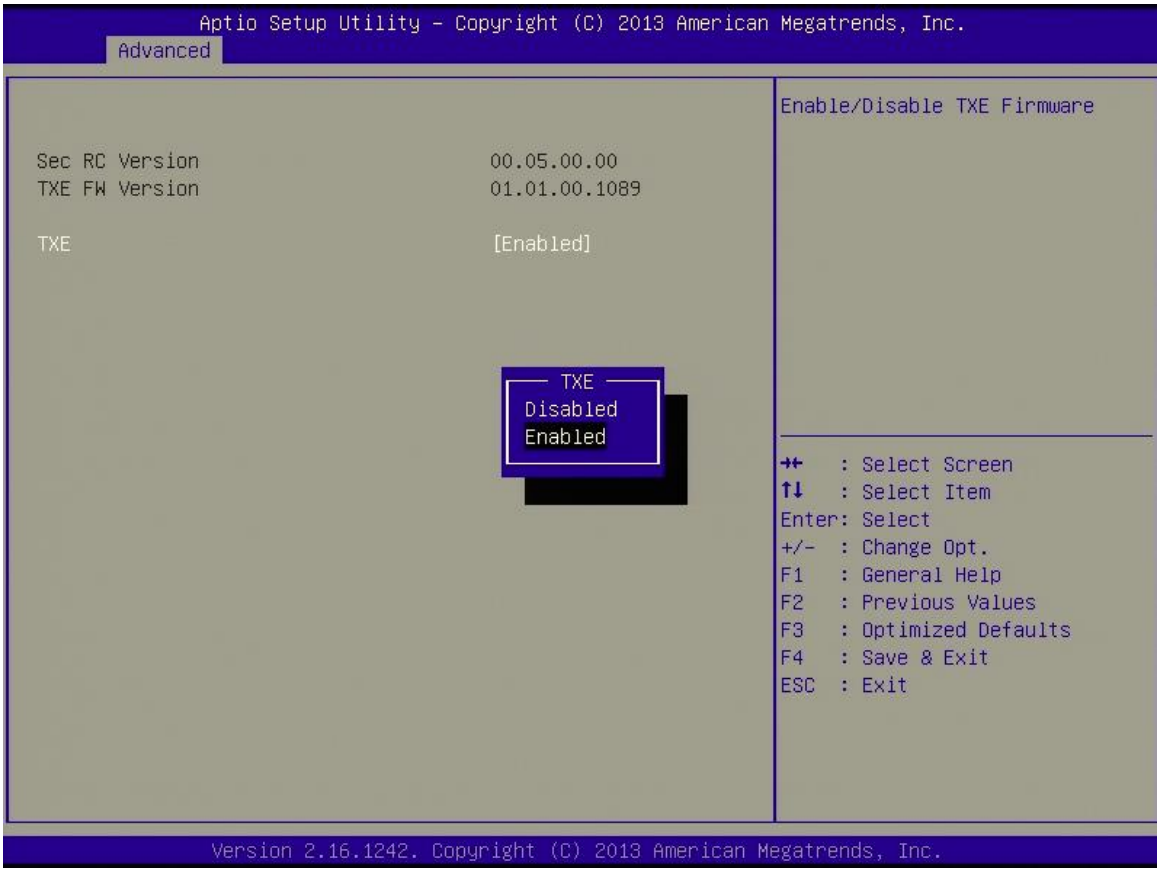
Select CPU Fan mode to be [Enable] [Disable]

When this feature is set to automatic the CPU's fan speed will rotate according to the CPU's

temperature, the higher the temperature, the faster the speed of rotation.

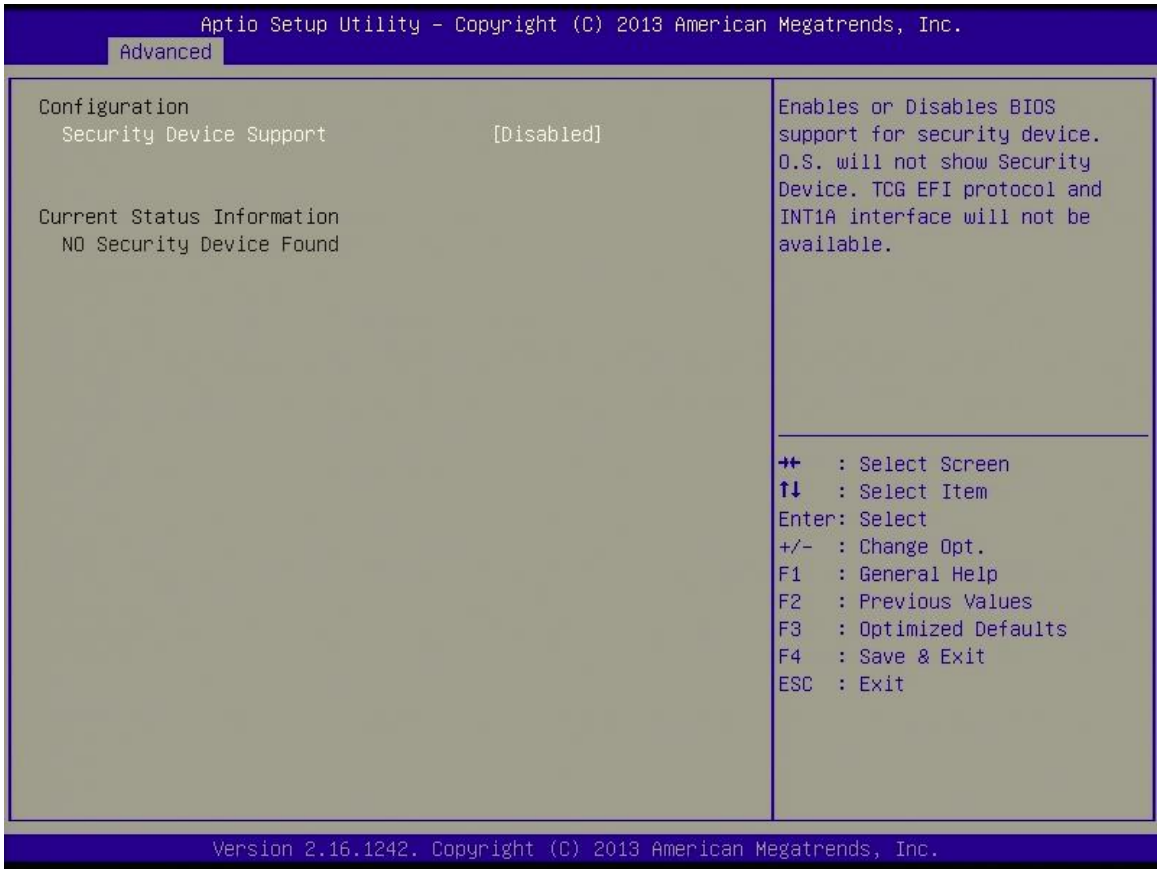
Smart Fan Mode Configuration options: [Manual Mode] [Thermal Cruise Mode]

2.4.10 TXE Configuration [Enable]



Enable or Disable TXE Firmware

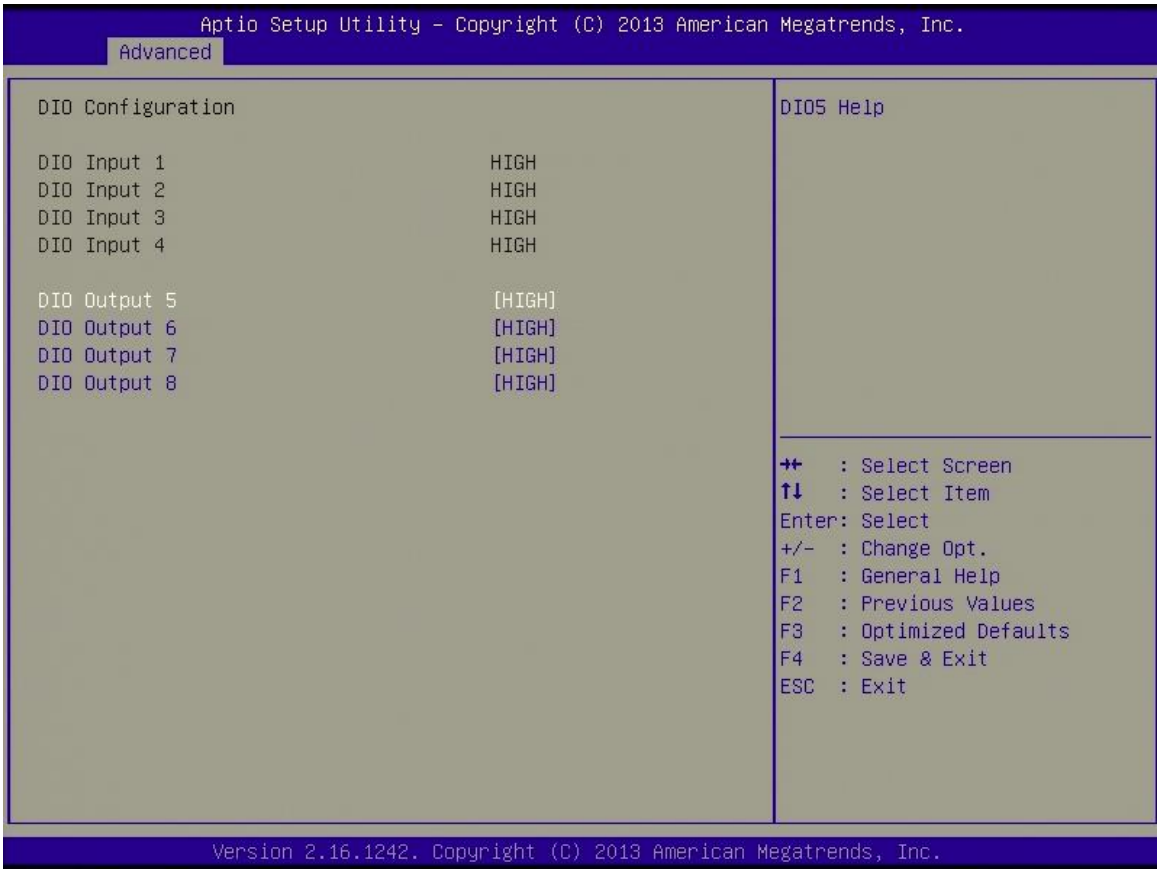
2.4.11 Trusted Computing


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Advanced
Configuration
Security Device Support [Disabled]
Current Status Information
NO Security Device Found
Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Security Device Support [Disabled]

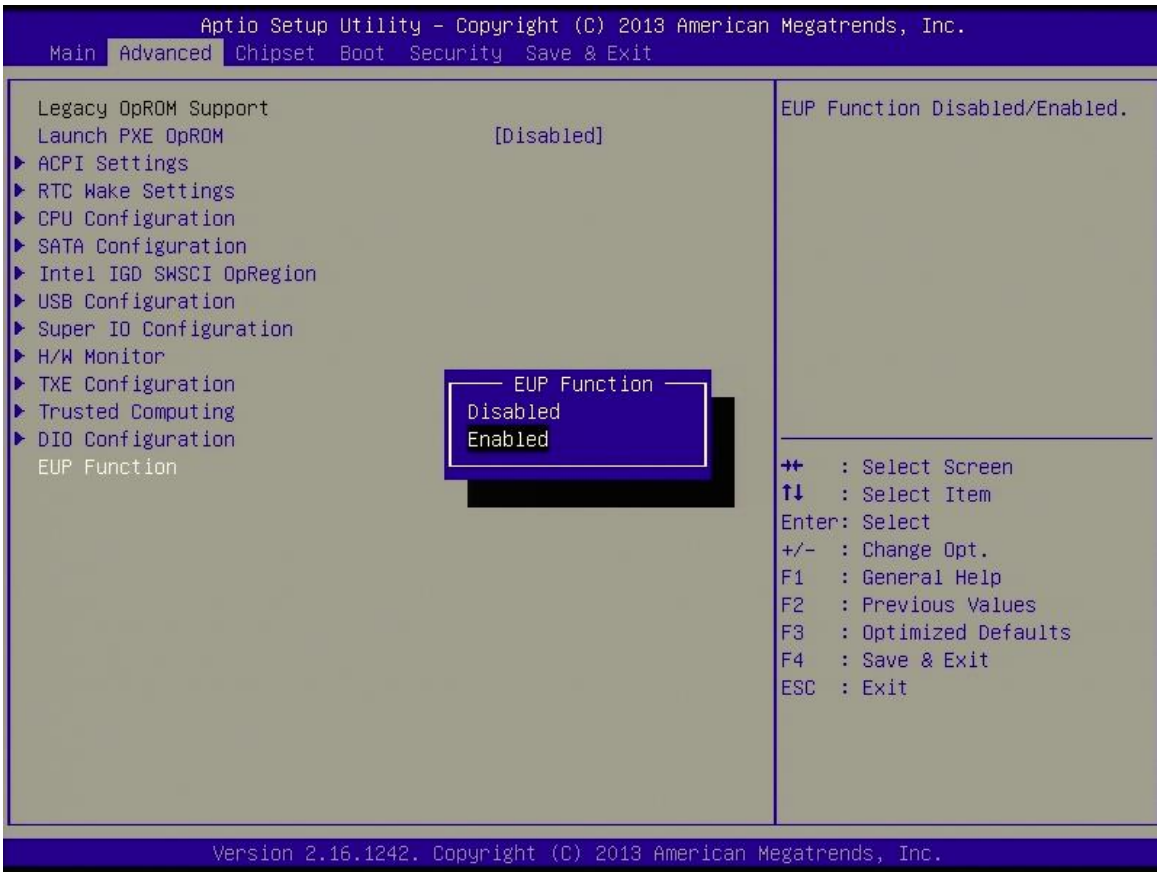
Enable or Disable BIOS support for security device.

2.4.12 DIO configuration

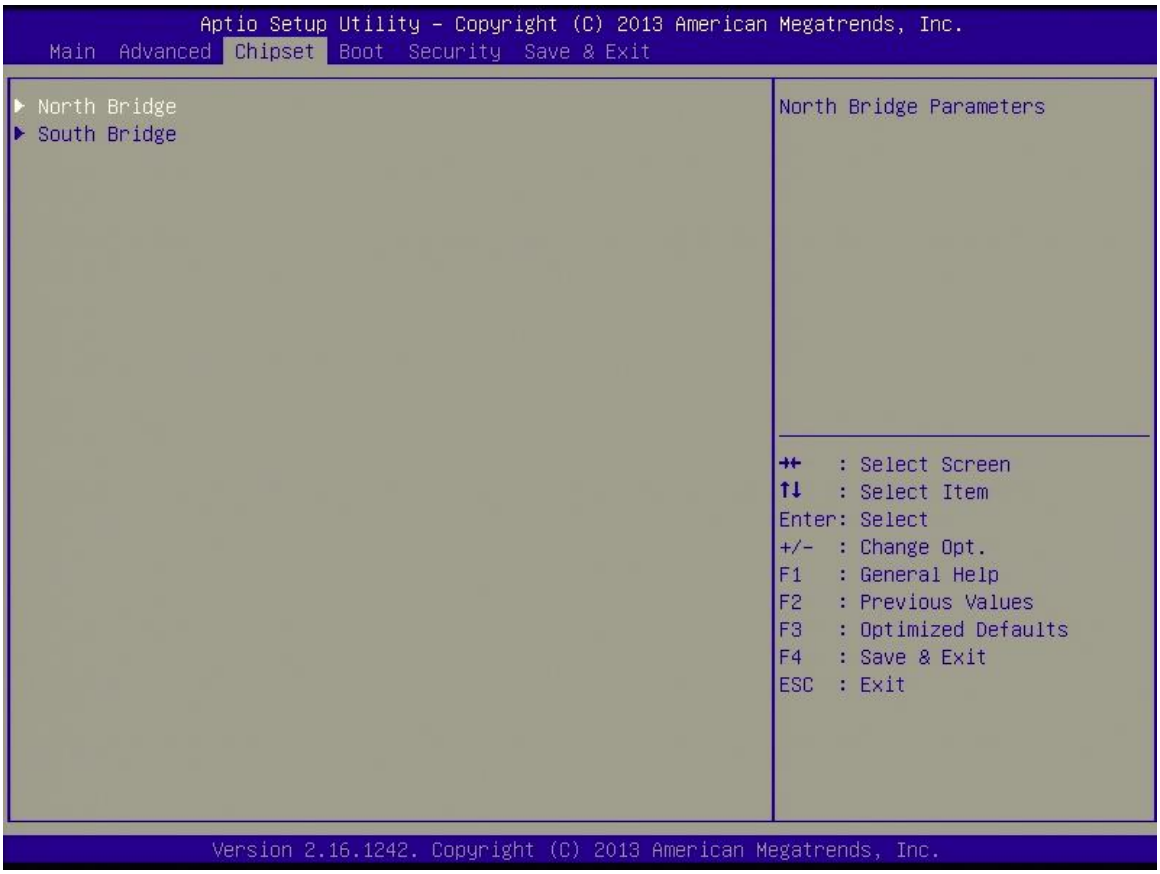

Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Advanced
DIO Configuration
DIO Input 1 HIGH
DIO Input 2 HIGH
DIO Input 3 HIGH
DIO Input 4 HIGH
DIO Output 5 [HIGH]
DIO Output 6 [HIGH]
DIO Output 7 [HIGH]
DIO Output 8 [HIGH]
DIO5 Help
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Allow user to check digital IO input 1~4 port state and set digital IO 5~8 port setting.

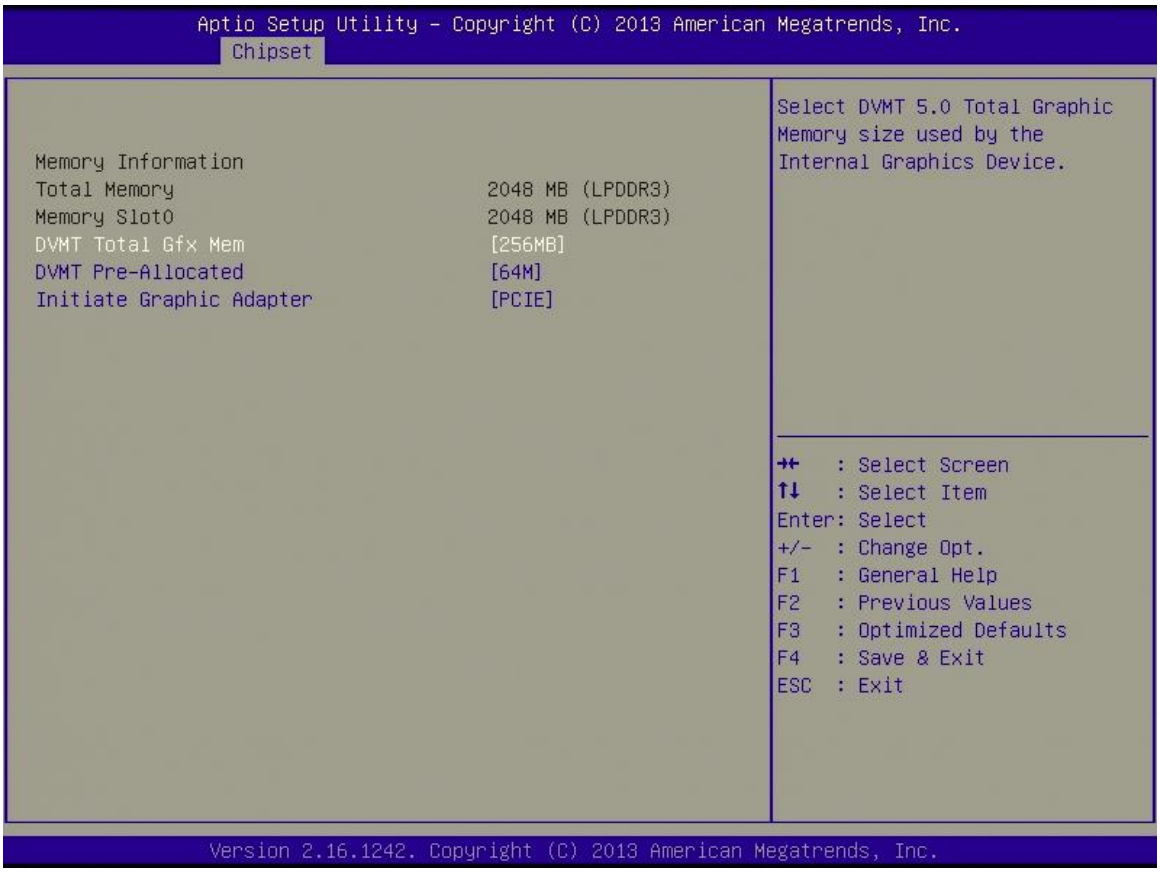
2.4.13 EUP Function [Enable]



2.5 Chipset Menu


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
North Bridge
South Bridge
North Bridge Parameters
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

2.5.1 North Bridge


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Chipset
Memory Information
Total Memory 2048 MB (LPDDR3)
Memory Slot0 2048 MB (LPDDR3)
DVMT Total Gfx Mem [256MB]
DVMT Pre-Allocated [64M]
Initiate Graphic Adapter [PCIE]
Select DVMT 5.0 Total Graphic Memory size used by the Internal Graphics Device.
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

DVMT Total Gfxz Mem [256MB]

When set to Max Mode, the graphics driver will reserve a Max. of system memory as graphics memory, according to system and graphics requirement.

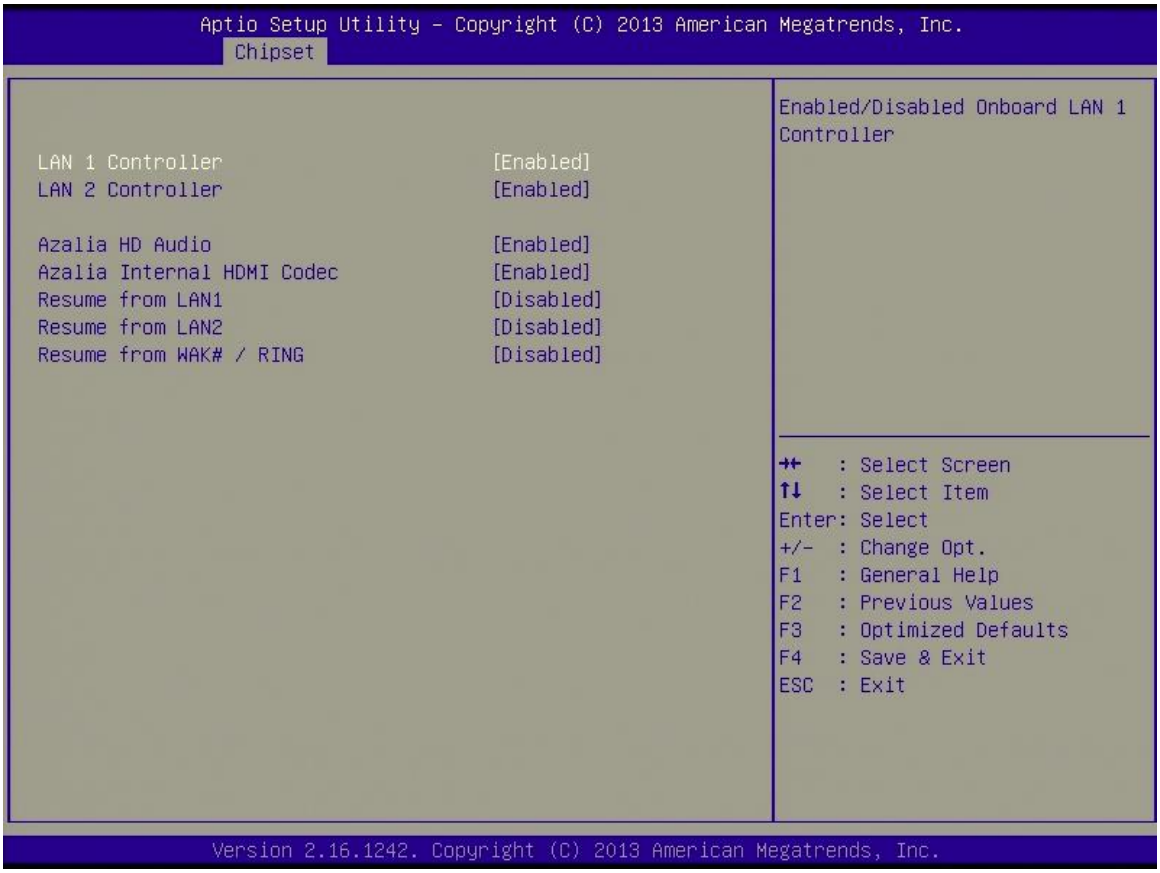
DVMT Pre-Allocated [64M]

Set DVMT Pre-Allocated graphics memory size by the internal graphics device.

Initiate Graphic Adapter [PCIE]

Set initial graphic adapter.

2.5.2 South Bridge


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Chipset
LAN 1 Controller [Enabled]
LAN 2 Controller [Enabled]
Azalia HD Audio [Enabled]
Azalia Internal HDMI Codec [Enabled]
Resume from LAN1 [Disabled]
Resume from LAN2 [Disabled]
Resume from WAK# / RING [Disabled]
Enabled/Disabled Onboard LAN 1 Controller
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

LAN 1 Controller [Enable]

Enable or disable onboard LAN1 controller.

LAN 2 Controller [Enable]

Enable or disable onboard LAN2 controller.

Azalia HD Audio [Enable]

Enable or disable onboard HD Audio controller.

Azalia Internal HDMI Codec [Enable]

Enable or disable onboard Audio internal HDMI controller

Resume from LAN1 [Disable]

Enable or disable resume from LAN1 function.

Resume from LAN2 [Disable]

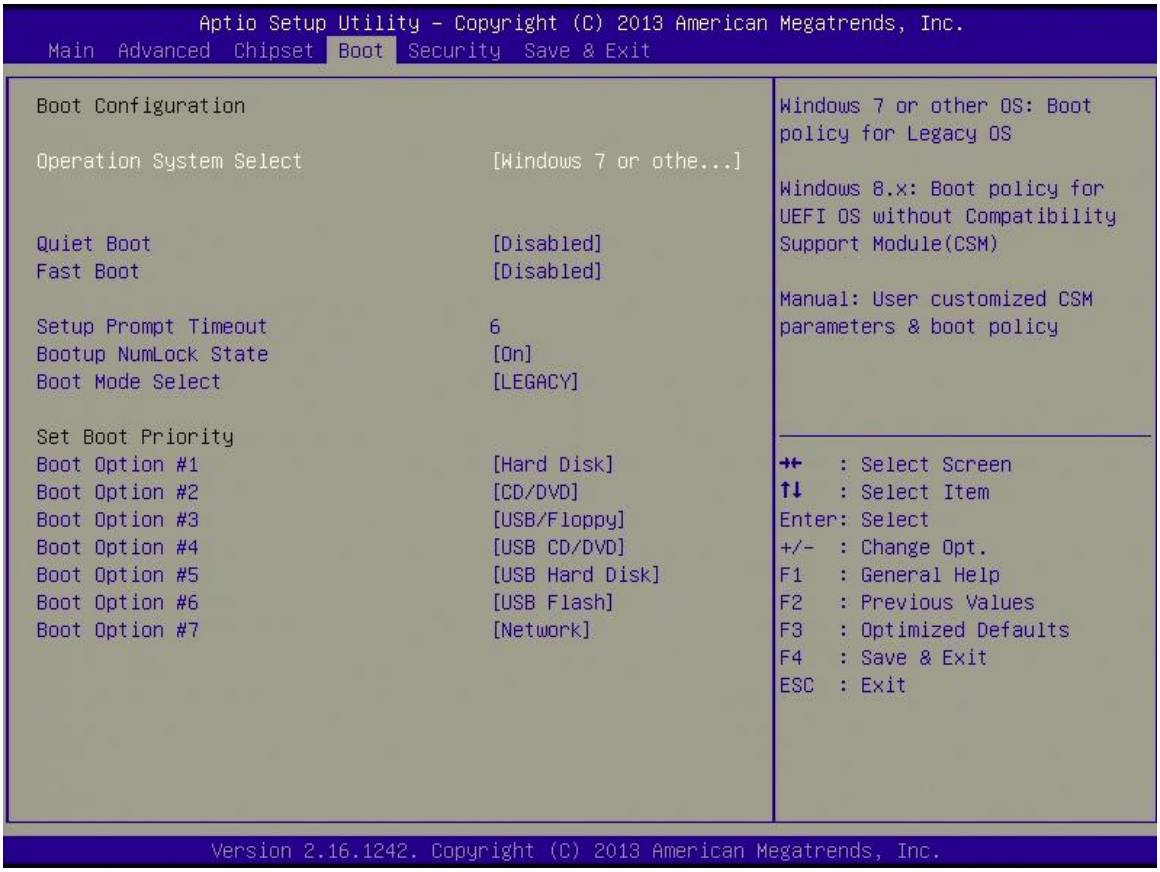
Enable or disable resume from LAN2 function.

Resume from WAK# / RING [Disable]

Enable or disable COM port WAK#/RING function.

2.6 Boot

Boot Configuration


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Boot Configuration
Operation System Select [Windows 7 or othe...]
Quiet Boot [Disabled]
Fast Boot [Disabled]
Setup Prompt Timeout 6
Bootup NumLock State [On]
Boot Mode Select [LEGACY]
Set Boot Priority
Boot Option #1 [Hard Disk]
Boot Option #2 [CD/DVD]
Boot Option #3 [USB/Floppy]
Boot Option #4 [USB CD/DVD]
Boot Option #5 [USB Hard Disk]
Boot Option #6 [USB Flash]
Boot Option #7 [Network]
Windows 7 or other OS: Boot policy for Legacy OS
Windows 8.x: Boot policy for UEFI OS without Compatibility Support Module(CSM)
Manual: User customized CSM parameters & boot policy
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
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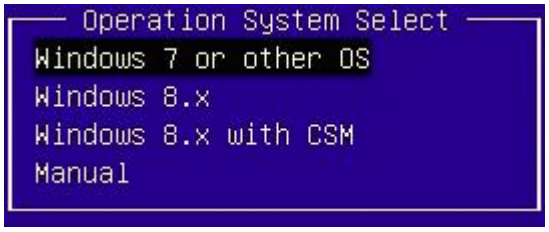
Operation System Select [Windows 8.x]

To select which OS would be installed. There are [Windows 7 or other OS] [Windows 8.x] [Windows 8.x with CSM] [Manual]



Quiet Boot [Disable]

Enable or disable Quiet Boot mode.

Fast Boot [Disable]

Enable or disable Fast Boot mode.

Setup Prompt Timeout [6]

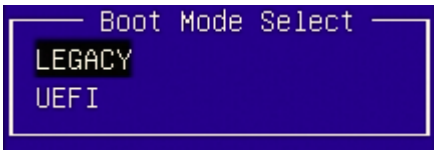
Increasing the value will make the POST take longer, the default setting is 1 second.

Bootup Numlock State [On]

Select the keyboard number lock status.

Boot Mode Select [UEFI]

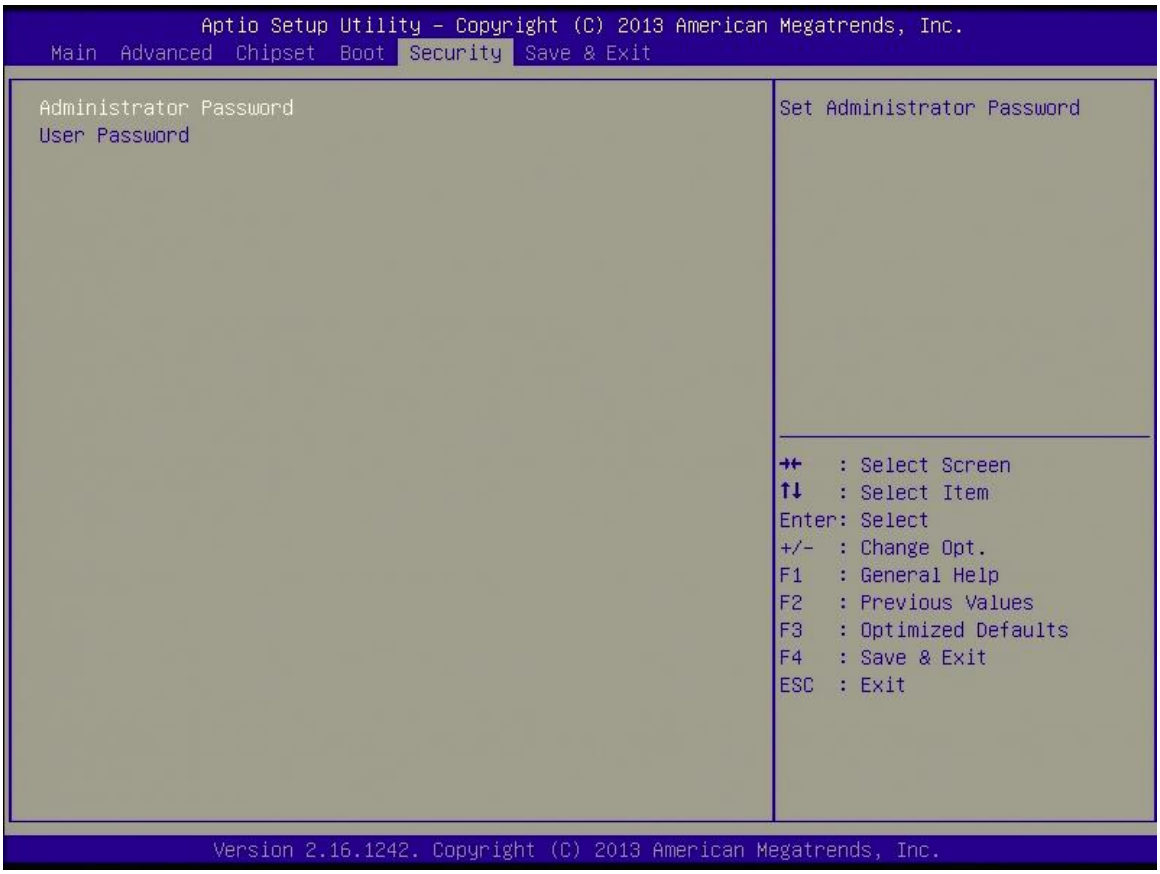
This options item could be set to [Legacy][UEFI].



Set Boot Priority

To set boot device priority by BIOS setting.

2.7 Security


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Administrator Password
User Password
Set Administrator Password
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
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Administrator Password

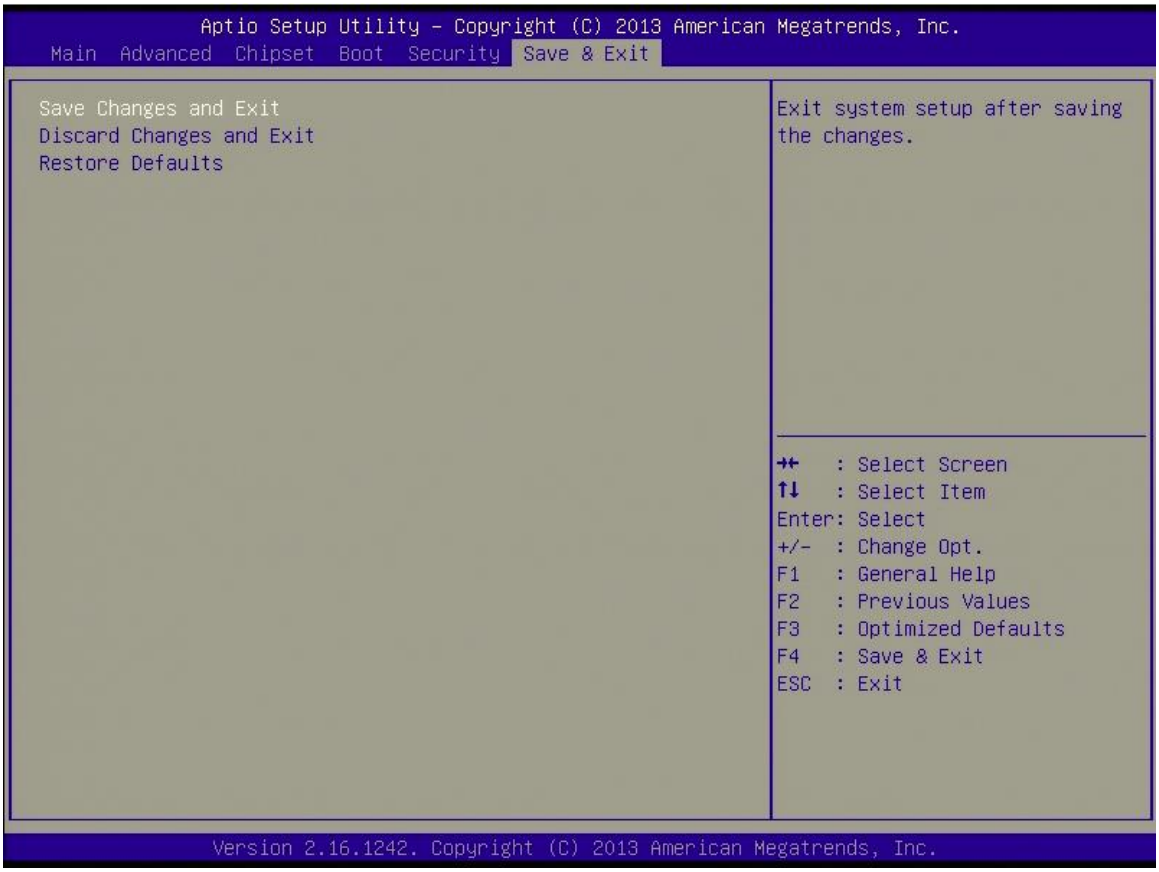
Set setup Administrator Password.

User Password

Set User Password

.

2.8 Save & Exit


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Save Changes and Exit
Discard Changes and Exit
Restore Defaults
Exit system setup after saving the changes.
→← : Select Screen
↑↓ : Select Item
Enter: Select
+/- : Change Opt.
F1 : General Help
F2 : Previous Values
F3 : Optimized Defaults
F4 : Save & Exit
ESC : Exit
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Save Changes and Exit

Exit system setup after saving the changes.

Discard Changes and Exit

Exit system setup without saving the changes.

Restore Defaults

Restore/Load default values for all the setup option.